Measuring brand loyalty in the Pharmaceutical industry of South Africa

by

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Mini-dissertation submitted in partial fulfillment of the requirements for the degree Masters in Business Administration at the Potchefstroom Business School, Potchefstroom Campus of the North-West University

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November 2012

ABSTRACT

Brands are recognised as one of the most valuable assets that a company can possess and therefore brands are key role-players in the business strategies of organisations. The rivalry amongst competitors in the pharmaceutical industry is fierce and companies should design their strategies in such a way in order to achieve competitive advantage. Brand loyalty is regarded as a powerful tool in the development of pharmaceutical brands.

The main aim of this study was to measure brand loyalty in the pharmaceutical industry of South Africa and to establish whether patients are brand loyal to original pharmaceutical brands and the influence of generics on pharmaceutical brand loyalty. The measurement of brand loyalty in the pharmaceutical industry is based on Moolla's brand loyalty framework for the FMCG (fast moving consumer goods) industry. This study also aimed to determine whether Moolla's FMCG brand loyalty framework is applicable to the pharmaceutical industry. The twelve brand loyalty influences identified by Moolla are: Customer satisfaction; Switching costs; Brand trust; Repeat purchase; Involvement; Perceived value; Commitment; Relationship proneness; Brand affect; Brand relevance; Brand performance and Culture.

The empirical study was conducted among 250 over-the-counter medicine consumers with different demographic profiles. The methodology included the sampling procedure, data collection, questionnaire development and statistical techniques used. Results were analysed with regards to Factor analysis; the Kaiser-Meyer-Olkin measure of sampling adequacy; Cronbach Alpha coefficients; Bartlett's test of sphericity, mean values and effect sizes. The Empirical results through quantitative analysis included the validity of the research instruments, the calculation of the reliability coefficients which reported on the significance of the research variables. The results were presented in a conceptual framework to measure pharmaceutical brand loyalty.

The results of this study concluded that the brand loyalty influences as identified by Moolla are important for measuring pharmaceutical brand loyalty. The results of this study also concluded that patients are indeed brand loyal and do prefer branded

pharmaceuticals to generic pharmaceuticals in the over-the-counter medicine industry of South Africa. The importance of this study is the contribution of a brand loyalty framework to measure pharmaceutical brand loyalty which will aid pharmaceutical companies in the strategic management thereof.

Keywords: Brand loyalty; over-the-counter medicine; branded pharmaceuticals; generic pharmaceuticals; pharmaceutical industry.

ACKNOWLEDGEMENTS

An accomplishment like this doesn't happen without support. It has been a long journey and I couldn't have achieved this MBA without the support of the following people:

- My father, Martin du Plooy and mother, Antoinette du Plooy who taught me that nothing is impossible and who planted the seed of ambition since I was small. Thank you for your support with every test, exam and finally this dissertation; thank you for teaching me to never give up and to dream big. Thank you for always encouraging me and for believing in me every step of the way. Thank you for all the calls late at night, all the prayers. Thank you for bringing out the best in me and all the opportunities. I couldn't have achieved this without the support of my parents and will be forever grateful to them.
- My sister, Talita and my brother, Ryno, for their support and faith in me.
- My promoter, Prof. C.A. Bisschoff for his guidance, wisdom and knowledge. Thank you for your time and for always being willing to help.
- Antoinette Bisschoff, for the language, technical and typographical editing of this dissertation.
- The Statistical Services department at the NWU Potchefstroom campus, especially Dr. S. Ellis for the calculation of the statistical measures.
- Francois Hoffmann, an expert in the pharmaceutical marketing industry, for providing the marketing data of the South African pharmaceutical industry.
- All the respondents who completed the questionnaire.

Most importantly, I would like to thank God for guiding me on this path, the road wasn't easy but He was there to carry me every step of the way. Thank You for giving me the talents and the determination to achieve this, this one is for You. It is my wish that with this MBA I will make a difference to honour God and achieve the great plans that He has for me.

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CHAPTER ONE

NATURE AND SCOPE OF THE STUDY

1.1 INTRODUCTION

One of the most valuable assets a firm can possess is a well-recognised and accepted brand (Wang, Wei & Yu, 2008:313). Brands are regarded as key role-players in the business strategy of leading organisations (Herstein & Zvilling, 2011:188). A brand adds emotional differentiation to the product characteristics and benefits, it can therefore slow down, stop or prolong commoditisation of a product (Griffiths, 2008:114). The main purpose of branding is to enhance new products, to identify the brand and increase repeat purchases (Moolla, 2010:2). Pharmaceutical brands are relatively young when compared to consumer brands of which 64% of the best known consumer brands are more than 50 years old (Griffiths, 2008:114). Branding is important in the pharmaceutical industry due to rising costs of research and development and therefore it is crucial to build the brand (Blackett & Harrison, 2001:39).

The rivalry amongst competitors in the pharmaceutical industry is fierce and companies should design their strategies in such a way in order to achieve competitive advantage (Arranz *et al*., 2004:17). The pharmaceutical industry is changing constantly due to new products being introduced continuously. New product entrants have patent protection but still experience competition from new improved therapeutic entrants even before the patent expires and generic alternatives enter the market (Hudson, 1992:111). Low brand loyalty towards a product will make it easier for new entrants to gain market share (Hudson, 1992:106). Consumer loyalty created through strong brands enhances shareholder value (Blackett & Harrison, 2001:40). When consumers are loyal to a pharmaceutical brand, they are willing to pay a higher price for that brand and thereby rewarding those pharmaceutical companies who offer better products to attend to their needs (Arranz *et al.,* 2004:10, 15). The reason for practitioners to prescribe more expensive

branded medicines rather than inexpensive generic alternatives is due to brand loyalty (Griffiths, 2008:113).

Brand loyalty can be defined as the extent of faithfulness to a particular brand (Moolla, 2010:5). Roy (2011:113) defines brand loyalty as the likeliness of the consumer to switch to another brand when that brand changes its price or product features. He also states that loyalty is a main indicator of long term financial performance of companies and has several benefits: greater sales and revenue; a substantial entry barrier to competitors; increase in a company's ability to respond to competitive threats and lower consumer price sensitivity.

Due to the growth in direct-to-consumer marketing and the internet the pharmaceutical marketers have the ability to go beyond the prescribing practitioner and target the end user, the consumer who now holds the power (Blackett & Harrison, 2001:47). Some patients do their own research with regards to what type of medication and which brand they should use (Saxton, 2011:382).

The South African healthcare industry can be divided into the public and private sector. In the public sector, medication is either free or a small fee is charged to all patients in government hospitals, primary healthcare sectors and public healthcare clinics. Medicine dispensed in the government sector consists of mainly generic brands. In private pharmacies or hospitals, patients' medication is mainly paid for by their medical aid or by the patient. In the private sector the patient has an option to either choose the generic or the original pharmaceutical brand. Almost half of South Africa's healthcare expenditure is accounted for by private insurance schemes, but the private sector accounts for only 20% of the South African population. The public sector provides healthcare for up to 80% of the South African population due to the increase of private healthcare costs, which is beyond the financial reach of most people (BMI, 2012:32).

The purpose of this study is to measure the brand loyalty of pharmaceutical brands and determine the factors influencing this phenomenal concept. The problem statement gives a clear need for further research to determine whether patients are loyal to original or generic pharmaceutical brands. Objectives are proposed and divided into primary and secondary objectives. Next, the research methodology will

be introduced which includes a literature review and empirical study. In chapter four, limitations are identified as well as areas for future research and a brief chapter division is introduced.

1.2 PROBLEM STATEMENT

According to Griffiths (2008:113), there is a lack of academic research connecting pharmaceutical branding to traditional branding literature. Despite the lack of research of pharmaceutical brand management, the existence of brands is clear in the pharmaceutical industry and little has been done to establish brands properly. Problems associated with regards to establish or build brands in the pharmaceutical industry are due to patent protection. Once the patent life of the brand expires and generic alternatives enter the market, brands are rarely further promoted after patent expiry (Griffiths, 2008:114).

Due to the complexity of pharmaceutical branding, marketers have pursued a new avenue in pharmaceutical brand management by focusing on patient influence over recent years. Brand loyalty amongst patients is a powerful tool to influence not only medical practitioners but also in the development of pharmaceutical brands. The concept of brand loyalty and the belief in brands are recognised by consumers (Griffiths, 2008:115, 116).

The main reason for generic substitution is to reduce consumers' expenditures on medicines (Sharrad & Hassali, 2011:109). However, generic substitution may not always be appropriate in certain circumstances where only a branded drug will be suitable for the patient (Sanyal & Datta, 2011:605). Consumers who are brand loyal are not willing to compromise drug safety and efficacy for lower prices (Arranz *et al.,* 2004:17). Some patients refuse to use certain brands even if it is recommended by their physician, due to the perception that the patient has about that specific brand. Other consumers are price sensitive and are unwilling to pay expensive prices for medication (Saxton, 2011:382). Although numerous research has been done to identify and establish consumer loyalty, there is a need for further research regarding the development and existence of consumer loyalty within the pharmaceutical industry (Griffiths, 2008:117).

1.3 RESEARCH OBJECTIVES

1.3.1 Primary objectives

The main aim of this study is to measure brand loyalty from a consumer perspective in the pharmaceutical industry. Secondly, to establish whether patients are brand loyal to original pharmaceutical brands, and thirdly, to determine the influence of generic brands on brand loyalty.

1.3.2 Secondary objectives

In order to achieve the primary objectives as mentioned above, the following secondary objectives are:

- Measuring the brand loyalty of the original pharmaceutical brand, Gaviscon.
- Measuring the brand loyalty of the generic equivalent of Gaviscon, namely Gelacid.
- Establishing the difference between the brand loyalty of the original pharmaceutical brand, Gaviscon, compared to the generic pharmaceutical brand, Gelacid.
- To evaluate the measuring instrument used to determine the brand loyalty of these pharmaceutical medicines.
- To determine the reliability of the data presented.
- To make recommendations based on the literature review and analysis of research data in order to measure brand loyalty.

1.4 RESEARCH METHODOLOGY

1.4.1 Literature and theoretical review

A literature review was done to determine the factors influencing brand loyalty. Secondly, literature was reviewed to determine whether patients are brand loyal to original pharmaceutical brands and the influence of generic brands on brand loyalty.

1.4.2 Empirical study

The study focuses on the measurement of pharmaceutical brand loyalty and based on the research problem and the objectives of the research the following empirical research approach was followed:

Quantitative research was conducted by using a questionnaire as a measuring instrument to test the hypothesis in the context of two pharmaceutical brands, one being the original brand, Gaviscon compared to its generic equivalent, Gelacid. The sample used to conduct the research was based in South Africa, ranging across different age, socio-economic, ethnicity and gender groups. The quantitative research was used to find solutions to the following research questions:

1. Which factors influence brand loyalty in the consumers' choice of pharmaceutical brands?
2. Do patients prefer original pharmaceutical brands to generic brands?
3. Is Moolla's brand loyalty framework relevant to pharmaceutical brands?

The questionnaire measured brand loyalty based on Moolla's brand loyalty framework, which proposed twelve factors which determine the level of brand loyalty. Moolla (2010:11) developed the questionnaire based on marketing literature and through consultations with academics specialising in the marketing field. The questionnaire included 50 closed questions which were based on the 12 factors identified.

1.5 LIMITATIONS

Firstly, the research was conducted using over-the-counter medicine brands and the results may not be applicable to prescription brands. Secondly, the proposed model is only tested in the South African culture and further studies should be conducted to get a global perspective. Thirdly, other factors influencing brand loyalty like the role of the prescribers, pharmaceutical sales representatives and pharmacists have not been included in this study. Resultantly, this study is performed from a consumer

perspective and the results, therefore, should be interpreted with this limitation in mind.

1.6 CHAPTER DIVISION

The dissertation is divided into the following chapters:

CHAPTER 1: NATURE AND SCOPE OF THE STUDY

Chapter one identified the primary and secondary objectives of this study and also addresses the need to measure brand loyalty in the pharmaceutical industry of South Africa. Chapter one also further elaborated on the structure of this study.

CHAPTER 2: LITERATURE REVIEW

Chapter two included a literature review of the South African pharmaceutical industry, and especially focused on the generic pharmaceutical industry and the over-the-counter medication industry. Chapter two also reflected on the concept of brand loyalty, the benefits of brand loyalty and Moolla's brand loyalty framework for the fast moving consumer goods industry.

CHAPTER 3: RESEARCH FINDINGS AND DISCUSSION

Chapter three presented the research methodology and elaborated on the methods used to conduct this study. It also included the analysis of the data and the empirical results of this study. The empirical results focused on the demographic profile of the respondents, the validity of the questionnaire, the reliability of the results as well the importance of the research variables.

CHAPTER 4: CONCLUSIONS AND RECOMMENDATIONS

Chapter four, which is the final chapter of this study, presented the adapted framework to measure pharmaceutical brand loyalty. Chapter four provided conclusions and recommendations with regards to the statistical procedures used and the results obtained within this study as well as areas for future research.

1.7 DEFINING MAJOR CONCEPTS

Brand: “A name, term, sign, symbol, design, or a combination of these that identifies the product or services of one seller or a group of sellers and differentiates them from those of competitors” (Kotler & Armstrong, 2010:255).

Brand affect: The total positive or negative evaluation of the brand (Matzler *et al*., 2006:428).

Brand commitment: An inclination to resist change and the desire to maintain a relationship (Jang *et al*., 2008:61).

Brand equity: Aaker (quoted by Ambler *et al*., 2002:14) defines brand equity as “a set of assets and liabilities linked to a brand, its name and symbol that add to or subtract from the value provided by a product or service to a firm and/or that firm’s customers”.

Brand involvement: A state of interest towards a brand that cannot be observed and it is related to behaviour and purpose (Moolla, 2010:131).

Brand loyalty: The likeliness of the consumer to switch to another brand when that brand changes its price or product features (Roy, 2011:113).

Brand performance: A measurement of a brand’s success (O’Cass & Ngo, 2007:15).

Brand relevance: The alignment of a brand, its brand identity and personality with the needs and wants of its target market and therefore satisfies a specific need of the consumer (Moolla & Bisschoff, 2012b:83).

Brand trust: A multi-dimensional concept which includes psychological variables that portray a collection of combined presumptions which all relate to the integrity, benevolence and trustworthiness that the consumer assigns to a brand (Louis & Lombart, 2010:117).

Competitive advantage: “An advantage over competitors gained by offering great customer value, either through lower prices or by providing more benefits that justify higher prices” (Kotler & Armstrong, 2010:234).

Competitive marketing strategies: “Strategies that strongly position the company against competitors and that give the company the strongest possible strategic advantage” (Kotler & Armstrong, 2010:552).

Consumer buyer behaviour: “The buying behaviour of final consumers (individuals and households) that buy goods and services for personal consumption” (Kotler & Armstrong, 2010:159).

Consumer involvement: A consumer’s perceived relevance of the product which is based on the consumer’s intrinsic values, interests and needs (Xue, 2008:87; Boisvert & Ashill, 2011:519).

Culture: The combined mindset that differentiates one group of people from another (Lam, 2007:8).

Customer equity: “The total combined customer lifetime values of all of the company’s customers” (Kotler & Armstrong, 2010:47).

Customer satisfaction: “The extent to which a product’s perceived performance matches a buyer’s expectations” (Kotler & Armstrong, 2010:37).

Drug: A specific chemical entity with therapeutic effects with a proprietary or non-proprietary name (Scott Morton, 2000:1090).

Generic: “a Class of substances bearing the same biological properties and is a synonym for recognised or non-proprietary names” (Sanyal & Datta, 2011:606).

IMS: A firm which collects and processes different types of pharmaceutical data and sells the information to customers, which are mostly pharmaceutical companies (Scott Morton, 2000:1090).

Market share: “Company sales divided by market sales” (Kotler & Armstrong, 2010:G5).

Marketing: “The process by which companies create value for customers and build strong customer relationships in order to capture value from customers in return” (Kotler & Armstrong, 2010:29).

Marketing strategy: “The marketing logic by which the business unit hopes to create customer value and achieve profitable customer relationships” (Kotler & Armstrong, 2010:72).

OTC: Over-the-counter medication is medication that does not require a prescription from a medical practitioner; it can be purchased freely and is regulated by health authorities through over-the-counter monographs which contain the approved ingredients, dosage instructions, formulation and labelling of medication (DeLorme *et al*., 2010:209).

Patented medication: An innovative medicine granted intellectual property protection by the patent and trademark office. The patent may encompass a wide range of claims – such as active ingredient, formulation and mode of action, giving the patent holder the sole right to sell the drug while the patent is in effect (BMI, 2012:99).

Perceived value: The outcome derived from evaluating the product’s features by the consumer or the consumer’s verdict about the supremacy or excellence of the product (Sanyal & Datta, 2011:606).

Pharmaceutical market: The sum of revenues generated by generic, patented, and over-the-counter (OTC) medication through hospitals, retail pharmacies and other channels (BMI, 2012:99).

Prescription medication: Patented and generic medication regulated by legislation that requires a physician’s prescription before they can be sold to a patient (BMI, 2012:99).

Relationship proneness: A consumer’s deliberate and constant tendency to connect with a particular product through a relationship with that product (Bloemer *et al*., 2003:231).

Repeat purchase: The degree to which consumers re-purchase the same brand measured through an equal-length time period (Punniyamoorthy & Raj, 2007:225).

Switching costs: The costs incurred by the consumer due to switching from one brand to another (Dick & Basu, 1994:104; Rhodes, 2012).

1.8 CONCLUSION

This chapter concluded the nature and the scope of this study and identified the following:

- The purpose of this study.
- The problem statement and the need to measure brand loyalty in the pharmaceutical industry.
- The primary and secondary objectives were identified based on the problem statement.
- The research methodology used to conduct this study which included a literature review and an empirical study.
- Limitations were identified and presented.
- A description of the structure of this dissertation with a brief overview of each chapter and the areas of research conducted in each.
- Major concepts were defined.

Chapter two reflects on the South African pharmaceutical industry which includes an overview of the over-the-counter medication industry and the generic pharmaceutical industry. Chapter two will also discuss the literature of brand loyalty and the development thereof from a single-dimension to a multi-dimensional construct. The benefits of brand loyalty to both consumers and companies will be discussed and the conceptual framework developed by Moolla for the FMCG (fast moving consumer goods) industry.

CHAPTER 2

LITERATURE REVIEW

2.1 INTRODUCTION OF BRAND LOYALTY

One of the predicaments that companies are facing today is how to make consumers more loyal to their brand (Kim *et al.*, 2008:99; SAS, 2012). Brand loyalty has been debated in academic literature over the past eight decades (Punniyamoorthy & Raj, 2007:222, 223; Kim *et al.*, 2008:99). The first time research on brand loyalty was published, was in 1923 through the work of Copeland and since then several definitions and measurement tools have been developed (Knox & Walker, 2001:111; Lam, 2007:8). Researchers have investigated this phenomenon in order to identify the elements that form the foundation of this consumer-brand relationship (Punniyamoorthy & Raj, 2007:223).

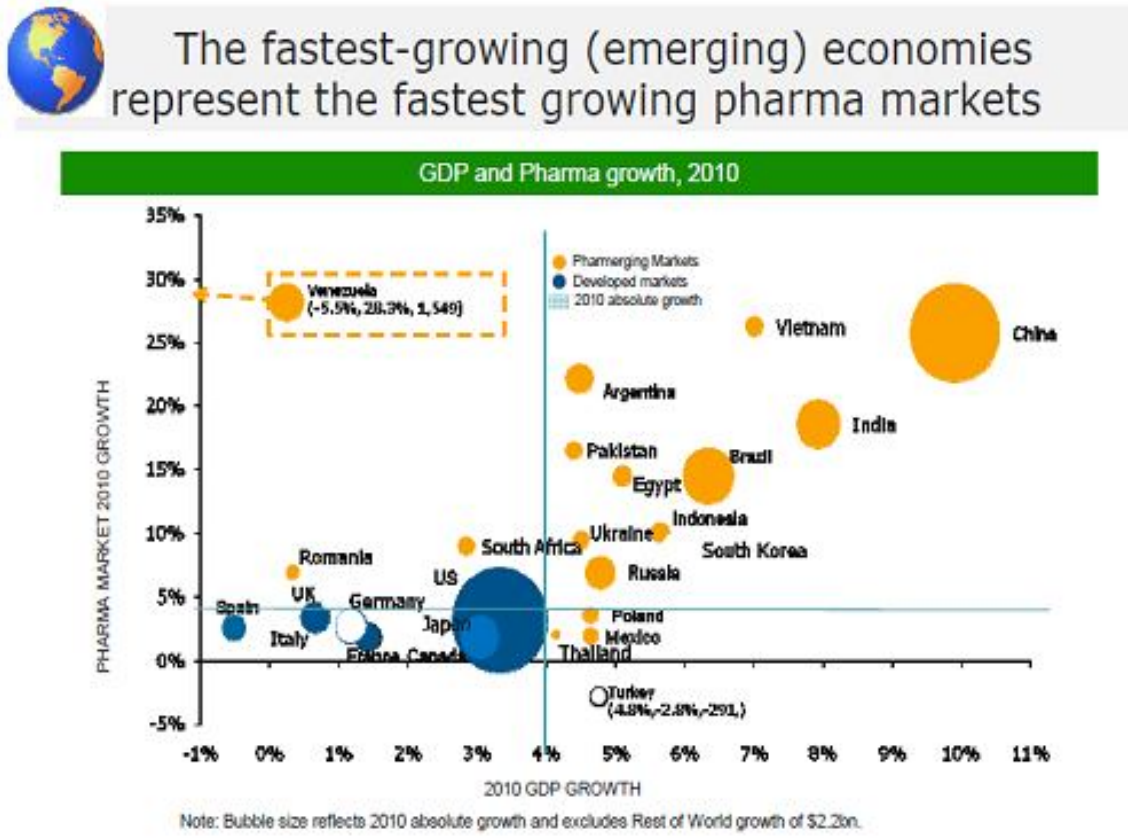
Brand loyalty has also been used by companies as a tool to measure the success of a marketing strategy and to measure brand equity (Knox & Walker, 2001:111). Jacoby and Chestnut, as quoted by Kim *et al.* (2008:100), define brand loyalty as an influenced behavioural reaction over a certain period of time by a decision-making authority from a selection of brands, which includes psychological processes. Thus brand loyalty includes both behavioural and psychological measurements (Knox & Walker, 2001:113).

Brand loyalty, according to Aaker, in Roy (2011:112), reflects how likely a customer will switch to another brand, when that brand changes its price or enhances its product features. Brand loyalty leads to brand equity, which in turn leads to business profitability (Roy, 2011:113).

2.2 PHARMACEUTICAL INDUSTRY OF SOUTH AFRICA

The fastest growing economies internationally are showing the fastest growth in the pharmaceutical markets which includes South Africa, as shown in Figure 2.1.

Figure 2.1: Emerging economies representing the fastest growing pharmaceutical markets (IMSHEALTH, 2010)

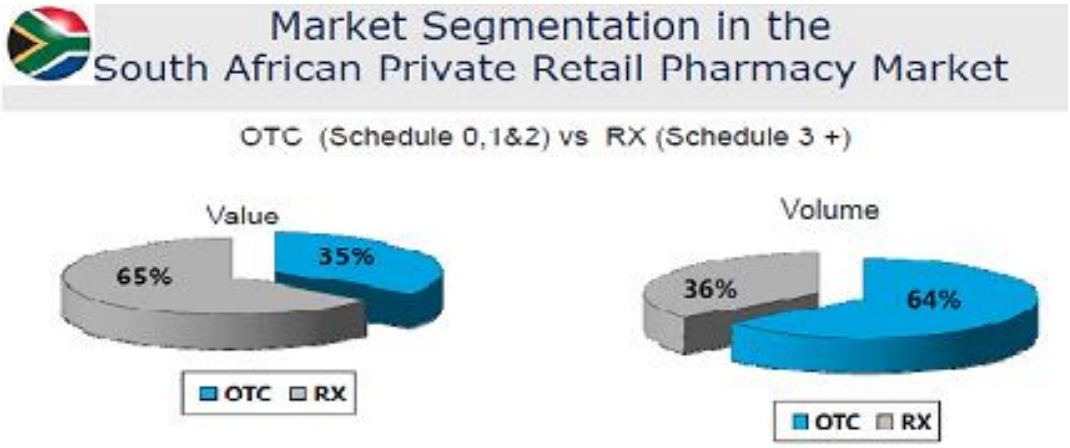


Source: IMSHEALTH (2010)

The South African pharmaceutical industry has a total market value of R35 billion per annum with a growth rate of 10% (IMSHEALTH, 2012). The pharmaceutical industry of South Africa can be divided into the private sector, accounting for R27 billion annually and the public sector accounting for R8 billion annually with a growth rate of of 9.6% and 11% respectively (IMSHEALTH, 2012). The private sector can further be divided into prescription medicine and over-the-counter (OTC) medicine (IMSHEATLH, 2012). The prescription market (Rx) contributes to R23 billion per annum with a growth rate of 10.1%, while the over-the-counter medication industry accounts for R4 billion per annum with a growth rate of 5.9% (IMSHEALTH, 2012).

As seen in Figure 2.2 the prescription market holds a market share of 65% of the private market and the over-the-counter (OTC) medicine market accounts for 35% of the private market based on value (IMSHEALTH, 2010). The prescription market might be greater in terms of rand value, but the OTC market leads with a volume share of 64% compared to the prescription market with a volume share of 36% as shown in Figure 2.2 below.

Figure 2.2: Market segmentation of the private retail market of South Africa.

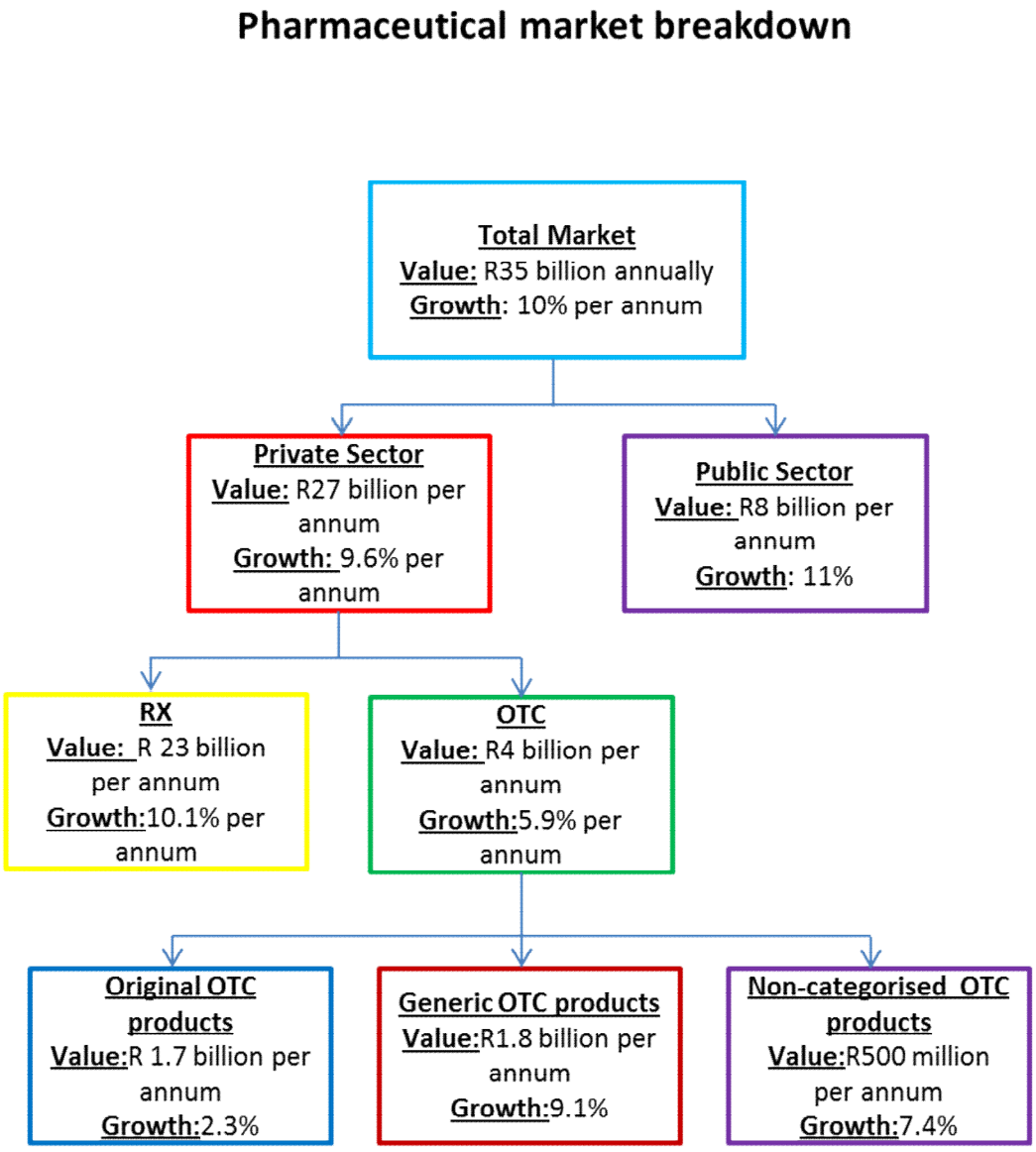


	Average Price (MAT Sep 2011)
All Products	R 57.19
OTC (Schedule 0,1&2)	R 31.20
Scripted (Schedule 3 +)	R104.16

Source: IMSHEALTH (2010)

The OTC market can further be divided into three categories, namely the original (patented) medicine market, the generic medicine market and the non-categorised OTC market as seen in Figure 2.3 on the next page (IMSHEALTH, 2012). The original or patented OTC market accounts for R1.7 billion of the OTC market with a growth rate of 2.3% annually. The generic OTC market is worth R1.8 billion annually with a growth rate of 9.1%, while the non-categorised market accounts for R500 million annually with a growth rate of 7.4% as seen in Figure 2.3 (IMSHEALTH, 2012). In 2016 the South African pharmaceutical market is expected to reach R41.37 billion, the prescription market R36.41 billion, the patented market R22.16 billion, the generic market R14.25 billion and the over-the-counter medicine market is expected to reach R4.96 billion (BMI, 2012:43-60).

Figure 2.3: Breakdown of the pharmaceutical industry of South Africa



Source: IMSHEALTH (2012)

2.2.1 Over-the-counter medicine in South Africa

The over-the-counter industry is a highly profitable and highly competitive industry (Kavanoor *et al.,* 1997:219; BMI, 2012:60). Consumers are more involved in their own health care than ever before (DeLorme *et al.,* 2010:209). According to DeLorme *et al.* (2010:209), over-the-counter medication can be defined as medication that

does not require a prescription from a medical practitioner; it can be purchased freely and it is regulated by health authorities through OTC (over-the-counter) monographs which contain the approved ingredients, dosage instructions, formulation and labelling of medication. Over-the-counter medication can be used by consumers to treat certain conditions that do not require the approval or regulation by a medical practitioner (DeLorme *et al.*, 2010:210). Over-the-counter medication is approved by the regulating authority of each Country to be safe and effective for patient use and should have limited potential to lead to substance abuse (DeLorme *et al.*, 2010:210).

The South African OTC market can be divided into two sections: Unrestricted and restricted medication: Unrestricted OTC medication is categorised as schedule zero medication and can be bought from pharmacies and supermarkets as the Medicine control council of South Africa (MCC) considers them to be safe enough. The schedule zero medication, which holds 13.8% of the total private market is worth R3.7 billion annually and growing at 31% (IMSHEALTH, 2012). Restricted OTC medication is dispensed and regulated by the pharmacist (DeLorme *et al.*, 2010:210). Restricted medication can further be divided into schedule one and schedule two medication. Schedule one medication accounts for 2.9% of the total private market and is worth R790 million annually with a growth rate of 5% (IMSHEALTH, 2012). Schedule two medication sales have to be recorded by the pharmacist and accounts for 12.6% of the total private market and is worth R3.4 billion annually with a growth rate of 6% (IMSHEALTH, 2012). Over 25 million South Africans use OTC medication (SMASA, 2006) and the OTC industry is expected to grow in future due to four factors (DeLorme *et al.*, 2010:210):

- Self-medication medicines are convenient and less expensive than prescription medication to treat minor illnesses.
- Prescription medication is switched to OTC status when proved safe and appropriate for self-medication, making more medication available to patients.
- The use of OTC medication is encouraged by medical aids or health care systems, as it is less expensive than prescription medication.

- With the use of the internet, people are more involved and empowered with their own health which increases self-medicating.

Patients are more likely to switch to over-the-counter medicines during economic recessions, as they are easier to obtain, less expensive and may postpone expensive treatments by temporarily treating the patient's problematic symptoms (BMI, 2012:16). Therefore, despite difficult economic conditions, consumers have remained loyal to certain branded OTC medicines, especially to older brands that they trust (DeLorme *et al*., 2010:210).

The leading OTC corporations in South Africa are displayed in Figure 2.4 below. Adcock OTC holds the first place followed by Aspen Pharmacare OTC and Adco-generics. The companies showing the greatest growth in 2011 are Akacia brands with a growth of 37.0%, Cipla-Medpro (24.1%), Aspen Pharmacare Generics (19.4%), Wyeth (18.5%), Inova Pharmaceuticals (15.9%) and Abbott Pharmaceuticals with a growth of 15.7% (IMSHEALTH, 2012).

Figure 2.4: Leading OTC corporations in South Africa

TPM MAT Feb 2011 Leading OTC Corporations	Rank 2011	Val 2009	Val 2010	Val 2011	Growth 2009	Growth 2010	Growth 2011
Selected Market	0	5,343,919	5,804,516	6,321,816	16.4	8.6	8.9
ADCOCK OTC	1	620,951	664,281	745,418	10.8	7.0	12.2
ASPEN P/CARE OTC	2	401,467	450,454	467,832	20.3	12.2	3.9
ADCO-GENERICS	3	328,035	368,185	427,725	16.4	12.2	16.2
JOHNSON & JOHNSON	4	297,136	324,806	309,822	15.3	9.3	-4.6
CIPLA-MEDPRO	5	189,371	227,424	282,289	26.0	20.1	24.1
SANOFI-AVENTIS	6	225,710	241,698	262,970	43.8	7.1	8.8
ASPEN P/CARE GEN	7	164,604	207,536	247,767	18.1	26.1	19.4
WYETH CONS HEALTH	8	159,874	177,808	210,622	10.4	11.2	18.5
RECKITT BENCKISER	9	167,939	178,789	202,349	8.5	6.5	13.2
ASPEN GSK	10	133,090	154,791	159,651	28.4	16.3	3.1
ROCHE DIAGNOSTICS	11	122,779	130,551	137,822	8.9	6.3	5.6
BOEHRINGER INGEL	12	140,767	135,434	136,714	15.2	-3.8	0.9
INOVA PHARMA	13	101,220	115,089	133,395	26.1	13.7	15.9
NOVARTIS CON HEALT	14	123,536	122,918	133,387	18.3	-0.5	8.5
ABBOTT	15	101,162	104,389	120,810	14.8	3.2	15.7
MSD(PTY)LTD	16	106,393	104,704	113,496	0.7	-1.6	8.4
JANSSEN	17	102,997	113,778	110,687	17.1	10.5	-2.7
BAYER CONSUMER	18	108,337	107,768	110,088	13.8	-0.5	2.2
AKACIA BRANDS	19	44,218	80,210	109,868	-11.4	81.4	37.0
GLAXOSMITHKLINE CS	20	92,421	101,158	98,190	9.1	9.5	-2.9

Source: IMSHEALTH (2012)

2.2.2 Generic pharmaceuticals in South Africa

The competition between branded and generic pharmaceuticals is fierce and some consumers are switching from branded medicines to generic medicines which are less expensive (DeLorme *et al.*, 2010:210, 224). Generic pharmaceuticals are an average of 50% cheaper than their original branded equivalents (BMI, 2012:57). Pharmaceutical innovations are protected by patents which restrict competition as companies are not allowed to imitate the innovator for a certain time period (Sanyal & Datta, 2011:606). According the South African Patent Act of 1978, patents have a lifespan of 20 years, but after three years an annual renewal fee has to be paid by the innovating company (BMI, 2012:21). Generic pharmaceuticals do not have patent protection like innovators (Sanyal & Datta, 2011:606). Patent protection according to Hudson (1992:104) provides enough time for the brand to develop brand loyalty amongst patients and prescribers. When the patent of the originator expires, competing firms enter the market with a generic equivalent with no legal restrictions (Scott Morton, 2000:1086; Brekke *et al.,* 2011:624; Sanyal & Datta, 2011:606). Before the generic medicine is approved by the regulating authority or launched by the company, the proposed generic medicine's therapeutic equivalence must be proven (Brekke *et al.*, 2011:624). The generic medicine contains the exact same active ingredient as the innovator and therefore has the same therapeutic effect, the same risks and benefits (Scott Morton, 2000:1086; Brekke *et al.*, 2011:624; Sanyal & Datta, 2011:606). Generic pharmaceuticals are therefore "copies" of the original brands and can be sold under the medicine's non-proprietary approved name of the active ingredient or it can have its own brand name or proprietary name (Sanyal & Datta, 2011:606).

According to Brekke *et al.* (2011:624), price should be the only differentiating factor influencing consumers' medicine choice since both medicines are exactly the same. Surprisingly this is not the case as it was found that innovator brands charge a higher price than their generic equivalents but still retain considerable market share (Brekke *et al.,* 2011:624). However, the market share of brand originators is influenced by the number of generic suppliers (Scott Morton, 2000:1089). Generic pharmaceutical companies have to charge a lower price than the originator in order to sell their product (Scott Morton, 2000:1086). The lower the price of the originator,

the lower the price of the generic product has to be (Scott Morton, 2000:1086). In certain circumstances a branded drug is more suitable for the patient than the generic; this is due to the perception of the brand, its respective name and the most recent innovation of medication available (Sanyal & Datta, 2011:604). Another limiting factor to the growth in the generic market's share will be the reluctance of consumers and prescribers to change consumptions patterns, as branded pharmaceuticals continue to be regarded as superior (BMI, 2012:57). Medical practitioners like doctors and pharmacists play an important role in deciding whether patients receive the brand or the generic equivalent (Scott Morton, 2000:1088).

In the South African pharmaceutical market, the use of generic medicine is promoted strongly. By law, a pharmacist is required to offer the generic alternative to the patient for any branded medicine if available (SMASA, 2006). Exceptions can be made if the patient refuses substitution or if the prescribing doctor has forbidden generic substitution. Substitution is also excluded if the generic version costs more than the original prescribed medication or if the generic has been declared as non-suitable by the Medicine Control Council (MCC) of South Africa (BMI, 2012:58). The pharmacist is also required to inform the patient about the benefits of generic substitution which mainly is a cost benefit. The patient has the right to decide whether or not to substitute the branded medicine for a generic medicine and substitution will always take place with the patient's consent (SMASA, 2006). The price elasticities of demand of the product's consumers also determine whether the patient will purchase the brand or the generic equivalent (Scott Morton, 2000:1095). If the patient has a medical aid which covers the cost of the medication and if the patient is more concerned with the quality of the medication, the patient may not buy a generic product even though it is available (Scott Morton, 2000:1088).

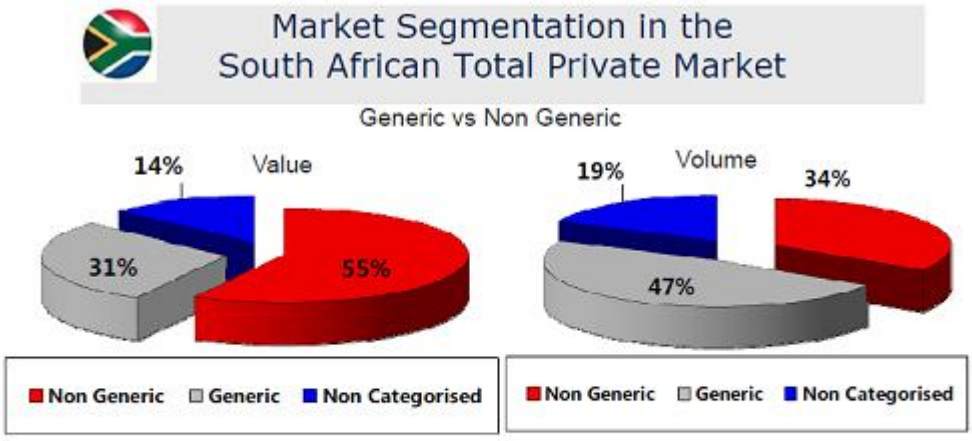
The South African government compiled the National Drug Policy for South Africa in order to ensure that the medication patients receive is effective, safe and meet certain standards and specifications as governed by the legislative council, the MCC (Medicine Control Council). What is interesting is that the South African government promotes the use of generic medication in order to achieve their aim which is to promote the availability of safe, effective medication at the lowest possible cost (SMASA, 2006). The demand for generic entry is further promoted by the increasing

number of consumers with an elastic demand like chronic patients and hospital buyers (Scott Morton, 2000:1087).

Due to the increase in generic competition, new pharmaceutical product launches by originator pharmaceutical companies are not generating enough revenue to account for the loss experienced due to generic competition (IMSHEALTH, 2010).

The generic market of South African holds a market share of 31% in value and 47% in volume of the South African pharmaceutical market as seen in Figure 2.5 (IMSHEALTH, 2010). The generic market's overall market share of the pharmaceutical industry of South African is expected to increase from 29.2% in 2011 to 34.4% in 2016 (BMI, 2012:57).

Figure 2.5: Generic and non-generic segmentation of the South African pharmaceutical market.

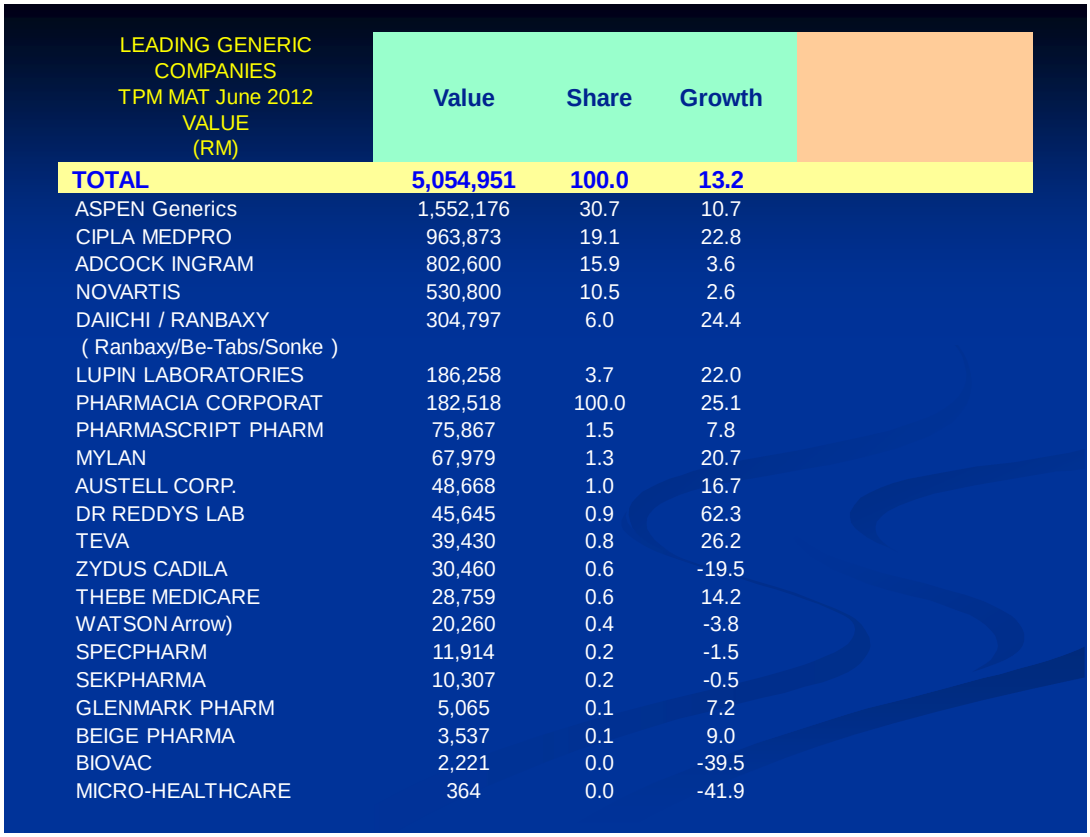


	Average Price (MAT Sep 2011
Generics	R 43.98
Non-Generics	R111.16
Non-Categorised	R 49.49

Source: IMSHEALTH (2010).

The South African generic market is worth over R7.2 billion annually and growing at 11% per annum (IMSHEALTH, 2012). The leading generic company in South Africa is Aspen pharmaceuticals, followed by Cipla medpro and Adcock Ingram (IMSHEALTH, 2012). Most of these generic companies listed in Figure 2.6 on the next page, have experienced positive growth over the past year and the total value of the top 21 generic companies for 2012 is R5, 054,951.

Figure 2.6: Leading generic companies of South Africa



LEADING GENERIC COMPANIES TPM MAT June 2012 VALUE (RM)	Value	Share	Growth
TOTAL	**5,054,951**	**100.0**	**13.2**
ASPEN Generics	1,552,176	30.7	10.7
CIPLA MEDPRO	963,873	19.1	22.8
ADCOCK INGRAM	802,600	15.9	3.6
NOVARTIS	530,800	10.5	2.6
DAIICHI / RANBAXY (Ranbaxy/Be-Tabs/Sonke)	304,797	6.0	24.4
LUPIN LABORATORIES	186,258	3.7	22.0
PHARMACIA CORPORAT	182,518	100.0	25.1
PHARMASCRIPT PHARM	75,867	1.5	7.8
MYLAN	67,979	1.3	20.7
AUSTELL CORP.	48,668	1.0	16.7
DR REDDYS LAB	45,645	0.9	62.3
TEVA	39,430	0.8	26.2
ZYDUS CADILA	30,460	0.6	-19.5
THEBE MEDICARE	28,759	0.6	14.2
WATSON Arrow)	20,260	0.4	-3.8
SPECPHARM	11,914	0.2	-1.5
SEKPHARMA	10,307	0.2	-0.5
GLENMARK PHARM	5,065	0.1	7.2
BEIGE PHARMA	3,537	0.1	9.0
BIOVAC	2,221	0.0	-39.5
MICRO-HEALTHCARE	364	0.0	-41.9

Source: IMSHEALTH (2012)

2.3 MODELS TO MEASURE BRAND LOYALTY

The development and measurement of the brand loyalty concept can be classified in three phases:

- **Phase one: Brand loyalty as a one-dimensional concept**

  In the first phase during earlier decades, too much attention was placed on the history of brand loyalty research (Punniyamoorthy & Raj, 2007:223). The focus was on operational measurements with technique-oriented models and mathematical models like Bernoulli and Markov's chain and linear models. Brand loyalty was defined as a one-dimensional concept, based on consumer behaviour alone. Critics argue that brand loyalty has to include more than just consumer behaviour and should not be seen as a repeat purchase phenomenon alone. According to Punniyamoorthy and Raj (2007:224), 75%

of consumers' purchase decisions are based on both emotion and attitude. Just as behavioural patterns cannot be used as a single measurement, attitudinal measures alone are also insufficient. Therefore it can be argued that both of these measures should be used together to determine consumer brand loyalty, which leads to the second phase in the development of the brand loyalty concept.

- **Phase 2: Brand loyalty as a two-dimensional concept**

  Oliver, as quoted by Punniyamoorthy and Raj (2007:224) defines brand loyalty as a commitment to rebuy a specific product or service repeatedly in future and therefore instigates same-brand purchasing regardless of situational influences and promotional variations which can lead to switching behaviour. Thus both attitudinal and behavioural measures are included in Oliver's definition which is also re-enforced by Jacoby and Chestnut, as quoted by Punniyamoorthy and Raj (2007:224), that brand loyalty is an influenced, behavioural response which occurs over a period of time, by a decision-making unit with a wide range of brands and it is a function of psychological processes.

- **Phase 3: Brand loyalty as a multi-dimensional concept**

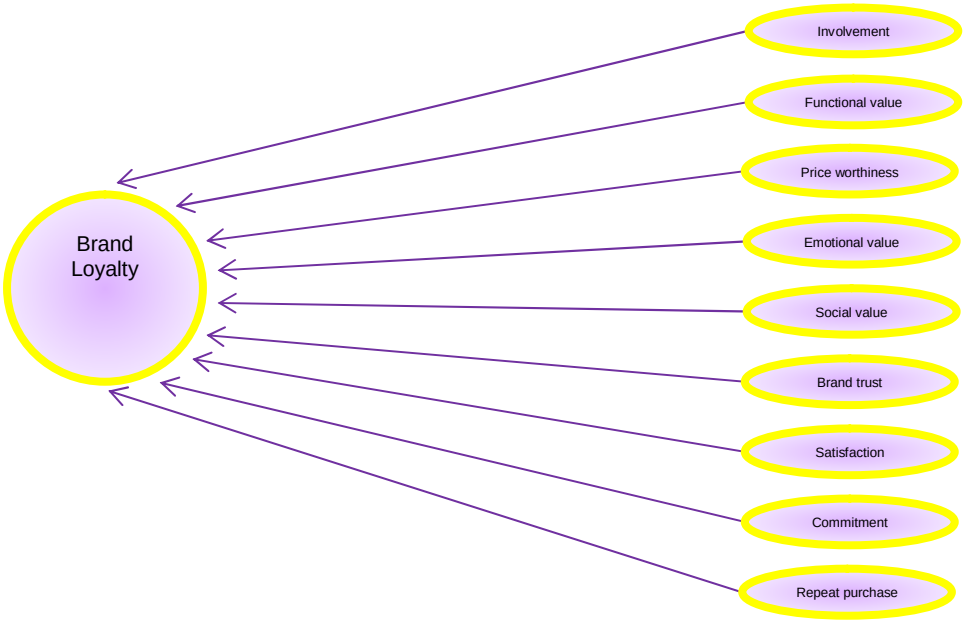
  In the third phase of the development of the brand loyalty concept, it can be viewed as a multi-dimensional construct which includes many psychological processes and a variety of measurements.

2.3.1. Punniyamoorthy and Raj (2007)

Punniyamoorthy and Raj (2007:222, 223) developed an empirical model for measuring brand loyalty. The model identifies factors which influence brand loyalty with regards to consumer behaviour. This empirical model includes both behavioural and attitudinal attributes, since the consumer has a strong psychological attachment to the brand consumed. They identified several factors that have an effect on the level of consumer brand loyalty, namely: involvement, perceived value, brand trust,

customer satisfaction, commitment and purchase pattern as seen in Figure 2.7 below (Punniyamoorthy & Raj, 2007:222).

Figure 2.7: Model for measuring brand loyalty



Source: Punniyamoorthy and Raj (2007:226)

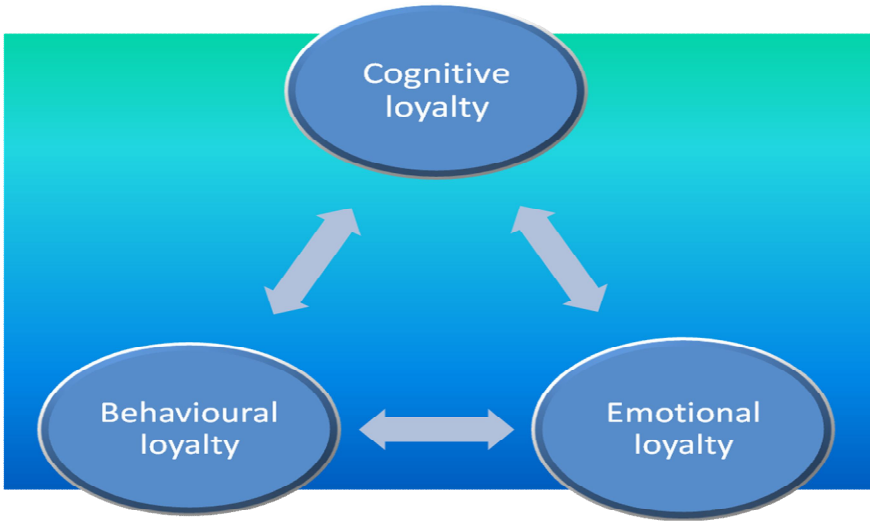
2.3.2 Roy (2011)

According to Roy (2011:112), researchers have focused on single-dimensional and two-dimensional models to determine brand loyalty. The two-dimensional models' elements include behavioural brand loyalty and attitudinal brand loyalty. Attitudinal loyalty can be defined as the consumers' psychological commitment to repurchase the brand, while behavioural loyalty is more focused on the repurchase action (Roy, 2011:112). However, the problem concerning researchers with this two-dimensional approach is that it is not an effective indicator of the three core marketing aims, namely customer retention, customer recommendation and market segmentation (Roy, 2011:112).

Roy introduced a model which uses a tri-dimensional approach to measure brand loyalty. This model includes behavioural loyalty as well as the two elements of

attitudinal loyalty namely the emotional and cognitive aspects (Roy, 2011:112). This tri-dimensional model is an extension of Oliver's (1999) theoretical work by including both cognitive and emotional loyalty together with behavioural loyalty (Roy, 2011:112). Human behaviour is an anthology of three types of responses namely behavioural, cognitive and emotional. Behavioural loyalty can be defined as brand preference (Roy, 2011:114). Cognitive loyalty is based on information such as product characteristics and price, whereas emotional loyalty is the extent to which positive feelings are provoked when purchasing a particular brand (Roy, 2011:114). Therefore, brand loyalty is the combination of a consumer's feelings and thoughts regarding a particular brand, expressed through behaviour as displayed in Figure 2.8.

Figure 2.8: Three-dimensional model of brand loyalty



Source: Roy (2011:115)

2.4 BENEFITS OF BRAND LOYALTY

From a consumer perspective the benefits of brand loyalty include:

- Consumers purchase the brand with more comfort, knowing that the brand will meet their expectations and it signals an achieved expectation. This comfort is due to the credibility that has been established from past experiences with the brand (Kim *et al.*, 2008:99).

The benefits of brand loyalty which emphasise its importance to companies, according to Delgado-Ballester & Munuera-Aleman (2005:188) are:

- An extensive barrier to entry to competitors.
- An increase in net revenue and sales.
- Improvement in the company's' ability to respond to competitive threats.
- Customers are less sensitive to competitors' promotional efforts.

Roy (2011:114) agrees with the above stated benefits and adds that brand loyalty leads to an increase in organisational profitability; reduction in customer price sensitivity and a reduction of costs to attract new customers.

Brand loyalty also increases brand equity by lowering vulnerability to competitors' marketing strategies, it increased profit margins, increases the effect of marketing communication and generates more opportunities for licensing or brand extensions (Jang *et al.*, 2008:62; Kim *et al.*, 2008:99). Brand loyalty also allows the company to charge premium brand prices and greater trade leverage (Degado-Ballester & Munuera-Aleman, 2005:189).

Amine (1998:313) states two benefits of brand loyalty: consumers' confidence in the brand which enhances brand support and a positive word of mouth about the brand. If consumers have confidence in a brand they purchase, they are less likely to switch to other brands despite influences like price, availability or the entrance of new competitive brands. Consumers will also defend their brand against negative rumors, which is an added benefit to companies in a time of crisis or when the brand is out of stock. It was also found that in highly competitive industries, brand loyalty can benefit the company by securing a sustainable position in the marketplace which leads to a competitive advantage (Amine, 1998:305).

Moolla (2010:89) identified the following benefits of brand loyalty:

- **Higher sales volume** (Moolla, 2010:89)

  One of the greatest challenges that companies are facing today is the loss of their consumers. The average company loses 13% of their consumers

annually. By building brand loyalty amongst consumers it will enhance not only the consumer retention rate but also lead to business growth.

- **Premium pricing ability and lower price elasticity** (Moolla, 2010:89)

  Consumers who are brand loyal are less sensitive to price fluctuations than those who are not brand loyal. These loyal consumers are also willing to pay a premium price for their preferred brand, as they believe it offers them a distinctive value which other brands cannot.

- **Retain rather than seek customer acquisition** (Moolla, 2010:89)

  It is four to six times less expensive for companies to retain their existing consumers than to attract new ones. Brand loyal consumers are less likely to switch to competitive brands and are therefore less sensitive to competitors' marketing efforts.

- **Creating perceptions** (Moolla, 2010:91)

  The price and quality of a product has a direct influence on the consumer's perception of the product, as premium pricing creates the perception of a higher quality product and therefore a greater value to the consumer. Companies and especially brand managers should bear this in mind when setting brand prices. It is also important to note that the importance of the price of the product is linked to the situation of the consumer and the availability of time to search for alternative products.

- **Increased usage and spending** (Moolla, 2010:91)

  Research has shown that the perceived quality of a product has an effect on consumers' expenditures and usage of the product as consumers are more inclined to purchase brands which they perceive as a quality brand. The perceived quality of a brand is therefore linked to brand loyalty and will influence the repeat purchase behaviour of consumers. Consumers are more likely to purchase brands which portray value as to repeating the selection process of brands with every shopping experience. A positive brand experience will also lead to more consistent purchasing patterns and the

consumer is more likely to purchase line extensions of that brand due to trust in the reputation of the company.

- **Contribution to Return on Investment (ROI) and enhanced return**

  Aaker (2012:43) explains that the perceived quality or value of a product contributes more to the company's return on investment (ROI) than marketing overheads, product development or market share. Thus by increasing the perceived quality of a brand, a company will indirectly be increasing their return on investment.

- **Financial benefits**

  Research has shown that financial benefits to companies follow consumer brand loyalty. The longer the relationship exists between the company and the consumer, the greater the financial benefits of brand loyalty will be to the company (Moolla, 2010:91). Other financial benefits to the company include referrals, cost savings, revenue growth, an increase in base profit and the ability to charge premium prices (Moolla, 2010:92). According to Kim *et al*., (2008:99), a general study performed by Bain & Co. showed that a 5% increase in consumer loyalty can increase the profitability of a company by 40% to 95% and an increase of consumer loyalty of 1% is equivalent to a cost reduction of 10%.

- **Referrals**

  Loyal consumers are satisfied customers and will therefore act as representatives for companies through positive word of mouth referrals (Moolla, 2010:94). Not only is this beneficial to companies in terms of reducing advertising expenditures needed but it also reduces customer acquisition costs (Moolla, 2010:94).

2.5 MOOLLA'S CONCEPTUAL FRAMEWORK TO MEASURE BRAND LOYALTY

Moolla developed a brand loyalty conceptual framework to identify the factors that influence behaviour related to brand loyalty. The conceptual framework was developed through research of historical brand loyalty models and identified the twelve most important influences of brand loyalty (Moolla & Bisschoff, 2012b:75). Moolla's conceptual framework to measure consumer brand loyalty includes the following twelve factors as shown in Figure 2.9 on the next page: customer satisfaction; brand trust; switching costs; involvement; commitment; perceived value; repeat purchase; brand affect; relationship proneness; brand relevance; brand performance and culture (Moolla, 2010:197).

The aim of the study was to identify the most significant factors that are playing a role when measuring brand loyalty in the fast moving consumer goods (FMCG) industry. Moolla conducted an empirical study among a sample of 550 consumers who all had access to a diverse range of fast moving consumer goods (Moolla & Bisschoff, 2012a:101). The empirical study measured the twelve factors influencing brand loyalty as well as the interrelationship between these factors (Moolla, 2010:12).

The results confirmed that brand loyalty is influenced differently by each of these twelve factors in the FMCG industry. It was also found that the psychological influences had a greater effect on brand loyalty than the brand performance influences (Moolla, 2010:IV). The importance of this study is the establishment of a conceptual framework in order to measure and therefore manage consumer brand loyalty.

The conceptual framework is applicable to marketing and brand managers to determine which specific brand loyalty influences are the most important for their products and to identify where their products fall short (Moolla & Bisschoff, 2012b:75).

Figure 2.9: A conceptual brand loyalty framework

Source: Moolla (2010:197)

2.5.1 Customer satisfaction

Customer satisfaction is a key element in the establishment of brand loyalty and can influence post-purchase behaviours which include repeat purchases of the brand, word of mouth advertising and product usage (De Chernatony *et al.,* 2004:21; Punniyamoorthy & Raj, 2007:225). If customers are satisfied with a brand they are willing to pay a premium price for that brand and therefore it has a positive effect on the financial performance of companies (De Chernatony *et al.*, 2004:21). Amine (1998:312), identified that some brand-switching may occur even when a consumer

is satisfied with a brand due to other influences like lower prices. Fullerton (2005:97), found that commitment intercedes the relationship between customer satisfaction and repeat purchase intentions of consumers. Customer satisfaction is seen as an attitude-like measurement after a customer purchases a brand and predecessors of customer satisfaction are perceived quality, customer expectations and perceived value (De Chernatony *et al.,* 2004:22).

Fullerton (2005:97), defines customer satisfaction as the customer's overall measurement of the experience of owning or consuming a product. The relationship between customer satisfaction and repeat purchases of a brand is positively related to customer retention (Fullerton, 2005:97). It was also found that consumers' positive emotional relations with a brand are driven by a series of satisfactory experiences (Fullerton, 2005:97).

Most of the companies today have a measurement system for customer satisfaction to ensure their performance is in line or better than their competitors'. Customer satisfaction is also a predictor of the possible success and profits that a company can expect to earn. If consumers are loyal, the customer retention rate is high and therefore business performance is likely to follow (Adams, 2003).

Customer satisfaction is the most frequently used variable to measure brand loyalty. It is also the total effect of several encounters over a certain time period between the consumer and the brand (Moolla, 2010:127). If consumers perceive a product to be of a good quality it leads to customer satisfaction towards that product (Sanyal & Datta, 2011:605).

2.5.2 Switching cost/risk aversion

Switching costs can be defined as the costs incurred by the consumer due to switching from one brand to another (Dick & Basu, 1994:104; Rhodes, 2012). Consumers will switch to another or a cheaper brand if their attitudinal loyalty towards their current brand is low. The difference in price between two brands can be used as an indication to test the reason for the repurchase of a brand and determine whether the consumer has a high brand loyalty towards a particular brand (Amine, 1998:307).

Two factors influencing switching behaviour is the product quality and product features of the brand (Knox & Walker, 2001:120). Brand switching may be encouraged when there is a change in the buying habits of the consumer and brand loyalty is low (Amine, 1998:308). When consumers are brand loyal, they are less likely to switch to another brand even though small price fluctuations occur within their preferred brand (Amine, 1998:314). According to Scott Morton (2000:1095), switching costs is one of the key influences which will determine how quickly generic brands gain market share from the original pharmaceutical brands.

Companies can increase the perceived risk associated with brand substitution in order to make consumers more committed to their brand (Amine, 1998:314, 315). Moolla (2010:128), identified three types of switching costs: transaction costs, learning costs and artificial costs. Transaction costs can be defined as those costs at the beginning of a relationship with a supplier. Learning costs can be defined as the effort or energy required by the consumer to establish the same degree of comfort with a new brand as they had with a previous brand (Moolla, 2010:128). Artificial or contractual costs are costs occurring through intentional measures by companies like discounts and loyalty rewards (Moolla, 2010:128). Switching costs can be a barrier when the consumer considers switching to another brand, especially if the buyer anticipates high switching costs (Moolla, 2010:128).

2.5.3 Brand trust

Brand trust can be defined as the inclination by the typical consumer to rely on the brand's ability to execute the function for which it is purchased for (Chaudhuri & Holbrook, 2001:83). Another definition states that brand trust is the confidence that one will find what is preferred and not what is feared and that one's vulnerability will not be exploited (Delgado-Ballester & Munuera-Aleman, 2005:188).

Brand trust is a multi-dimensional concept which includes psychological variables that portray a collection of combined presumptions which all relate to the integrity, benevolence and trustworthiness that the consumer assigns to the brand (Louis & Lombart, 2010:117). Based on this definition, a brand will be perceived as credible if it meets the expected performance that is assumed by the consumer; a brand will be of integrity if it is perceived as honest and delivers the claims promised; a brand is

benevolent if it takes consumers' interests to heart (Louis & Lombart, 2010:117). For consumers to trust a brand, it means that there is a high expectancy that the brand will bring a positive outcome to the customer (Delgado-Ballester & Munuera-Aleman, 2005:188).

The development of brand trust leads to a positive and encouraging attitude towards a brand and it is therefore a central element to build a long term relationship with the consumer. Brand trust is the key factor on which relationships are built and it requires an emotional commitment from the consumer which in turn leads to sustainable brand loyalty (Delgado-Ballester & Munuera-Aleman, 2005:187; Punniyamoorthy & Raj, 2007:225; Louis & Lombart, 2010:119).

A trustworthy brand is one that keeps its promise of value to its customers; this is done through the way the product is developed, serviced, advertised, produced and sold (Delgado-Ballester & Munuera-Aleman, 2005:188). Brand trust is a two-dimensional concept which includes (Delgado-Ballester & Munuera-Aleman, 2005:188):

- The first dimension: Reliability, the ability and willingness to keep promises and satisfy consumers' needs.
- The second dimension: Intentions, the attribution of good intentions to the brand which is in line with the needs of the consumer.

When consumers have trust in the brand they purchase it can be seen as a leverage of the brand's credibility which will reinforce consumers' repeat purchases of the brand and enhance their level of brand loyalty towards the brand (Amine, 1998:314). Trust is the fundamental driver of loyalty as it creates an exchange relationship that is valued by both parties (Delgado-Ballester & Munuera-Aleman, 2005:189). Therefore in this case, brand loyalty focuses on the consumer's attitude towards the brand and not only on repeat purchase behaviour (Delgado-Ballester & Munuera-Aleman, 2005:189). The higher the degree of trust in a brand, the higher the consumer loyalty to that brand and the higher the degree of brand loyalty (Moolla, 2010:129).

Brand trust does not only influence the consumer's brand loyalty but also that of medical practitioners. Sanyal and Datta (2011:605), state that doctors' prescription behaviour is influenced by numerous aspects of which brand trust in the pharmaceutical company is one of the key influences.

Company reputation is an important factor to develop brand trust amongst consumers as a good reputation reduces the perceived risk of making a wrong choice (Moolla, 2010:129). A good reputation of a company increases exit barriers for current consumers, while it lowers entry barriers for new customers (Moolla, 2010:129). If consumers have trust in the brand, they are also willing to give the brand a second chance should there be any mistakes on the part of the company like during out of stock situations. For companies, the ultimate marketing aim is to create a bond between the brand and the consumer which is built on brand trust (Delgado-Ballester & Munuera-Aleman, 2005:189, 193).

Companies should position their brands in such a way that it offers a promise of a certain level of value to consumers. Company resources such as brand trust and brand loyalty cannot be purchased or replicated by competitors. When brand trust and brand loyalty are combined, it forms a greater resource namely brand equity, which leads to a sustainable, resourced-based competitive advantage (Delgado-Ballester & Munuera-Aleman, 2005:192-195).

2.5.4 Repeat purchase

The continuous repurchase of a brand is a loyalty-prone behaviour which is the foundation of brand loyalty (Punniyamoorthy & Raj, 2007:226). Repeat purchase behaviour can also be defined as the degree to which consumers re-purchase the same brand measured through an equal-length time period (Knox & Walker, 2001:113; Punniyamoorthy & Raj, 2007:226).

After a series of frequent repeat purchases of a brand, the consumer forms a habit of buying that brand which leads to the establishment of brand loyalty. Once this behavioural brand loyalty has been founded, it is unlikely for the consumer to switch to a different brand (Punniyamoorthy & Raj, 2007:226). Repeat purchases depend on the consumer's evaluation of the perceived value that a brand offers. Loyal consumers use repeat purchasing of a brand to reduce the risk involved in product

purchases (Knox & Walker, 2001:121). The ultimate success of a brand is dependent on the loyal customers who purchase the brand frequently (Amine, 1998:206).

One of the aims of a company's marketing strategy is to assist the process of consumers repurchasing a brand (Knox & Walker, 2001:112). The importance of repeat purchasing behaviour is important to companies, because it requires less marketing resources to retain consumers than to recruit new ones (Knox & Walker, 2001:112).

Repeat purchases can also be made due to the habit of buying the same brand; this reduces search efforts and is less time consuming for consumers. It is therefore important to establish whether repeat purchases are made due to brand commitment which underlies brand loyalty or just to reduce search efforts which would indicate a lower level of brand loyalty and a more likely chance to switch to other brands (Amine, 1998:306, 309). Research has shown diverse sources for repeat purchase behaviour which can be categorised into three sections: cognitive motives, affective motives and purchase decisions due to a lack of alternative choices, store loyalty or lower prices (Amine, 1998:310). The former group of repeat purchase behaviour is not an indication of brand loyalty as it does not meet the requirements as defined in the definition of brand loyalty: a behavioural response which includes psychological processes (Moolla, 2010:60). Consumer loyalty is based on a high level of commitment which leads to the repurchasing of a brand by the consumer (Jang *et al.*, 2008:62).

2.5.5 Involvement

The level of consumer involvement in a brand category has been identified as a major influence relevant to strategy and in the building of strong brands (Shukla, 2004:84; Swoboda *et al.*, 2009:953). Involvement includes a continuous commitment of the consumer which incorporates thoughts, emotions and behaviour towards a product and it is a multi-dimensional construct (Quester & Lim, 2003:24, 25). Consumer involvement can be defined as the degree of personal significance of a brand to the consumer (McWilliam, 1997:60; Knox & Walker, 2001:115). Product involvement can also be seen as the degree to which a product is rooted and driven

by the consumer's value system (Quester & Lim, 2003:24). Certain conditions like financial, physical or psycho-social risk factors stimulate the need for involvement (McWilliam, 1997:60). Consumer involvement is also identified as a consumer's perceived relevance of the product which is based on the consumer's intrinsic values, interests and needs (Xue, 2008:87; Boisvert & Ashill, 2011:519). Involvement reveals the perceived relevance of the product to the consumer on a continuous basis (Quester & Lim, 2003:24). Involvement is important as it prevents consumers from switching to other brands (Shukla, 2004:97).

Several researchers support the relationship between involvement and brand loyalty, especially attitudinal loyalty was highly correlated with involvement (Quester & Lim, 2003:22; Punniyamoorthy & Raj, 2007:224; Moolla, 2010:131). The greater the level of involvement, the greater the level of brand loyalty (Punniyamoorthy & Raj, 2007:224). High product involvement also signals a greater emotional attachment to the brand involved (Swoboda *et al.,* 2009:956).

Consumer involvement is seen as an indirect source and predecessor for true brand loyalty, which can be seen as something important and relevant to the consumer (Amine, 1998:311). Moolla (2010:130), states that brand involvement is a state of interest towards a brand that cannot be observed and it is related to behaviour and purpose. Numerous research studies show that consumer involvement may enhance brand loyalty and that consumers display a low level of brand loyalty when brand involvement is low and vice versa (Amine, 1998:312; Moolla, 2010:131).

2.5.6 Perceived value

Perceived value is defined as the customer's measurement of the effectiveness or benefit of the product compared to the price paid to obtain the product. Research strongly proposes that perceived value contributes to brand loyalty. Thus the higher the perceived value perceived by customers, the higher the level of brand loyalty towards that brand (Punniyamoorthy & Ray, 2007:225). A positive relationship therefore exists between brand loyalty and the perceived quality of a brand (Sanyal & Datta, 2011:609). Perceived value can be classified into four categories: functional value, emotional value, price-worthiness factor and social value (Punniyamoorthy & Raj, 2007:225; Moolla, 2010:131-132).

- **Functional value**

  Functional value can be defined as the product value, efficacy and product performance, which influences consumer purchase decisions. Punniyamoorthy and Raj (2007:225), found that functional value is a key influence on the purchase decisions that consumers make and it is established by factors such as robustness and trustworthiness. The greater the degree of functional value, the greater the degree of brand loyalty towards a brand (Punniyamoorthy & Raj, 2007:225).

- **Emotional value**

  Emotional value results from the feelings of affection that the consumer has towards a brand and therefore it influences the consumer's purchase decisions. The greater the emotional value that a consumer feels towards a brand, the higher the level of brand loyalty (Punniyamoorthy & Raj, 2007:225).

- **Price-worthiness factor**

  Punniyamoorthy and Raj (2007:225), state that the price-worthiness factor results from the decrease in the perceived cost of a brand. The price-worthiness factor is when the value of a product purchased seems higher than the price paid, thus value for money. The greater the level of the price-worthiness factor, the higher the degree of brand loyalty (Punniyamoorthy & Raj, 2007:225).

- **Social value**

  The social value of a brand or product involves the self-concept of the consumer who purchased the brand, thus the product enhances the consumer's self-concept. The higher the social value level, the greater the degree of brand loyalty (Punniyamoorthy & Raj, 2007:225).

The perceived value of a particular brand is derived from the trust that the consumer has in that brand and the belief that other brands do not provide that same quality or value (Delgado-Ballester & Munuera-Aleman, 2005:189). Sanyal and Datta (2011:605), state that customer satisfaction plays an important role in how

customers perceive the quality of a brand. Perceived value can also be defined as the outcome derived from evaluating the product's features by the consumer or the consumer's verdict about the supremacy or excellence of the product (Sanyal & Datta, 2011:605, 606). Higher quality perceptions lead to an increase in profits due to the willingness of the consumer to pay a premium price in the short term. In the long term, high quality perceptions lead to business growth and an increase in market share gains and market expansions (Sanyal & Datta, 2011:607).

2.5.7 Commitment

Consumer commitment to a brand is an essential element to establish brand loyalty (Amine, 1998:305; Knox & Walker, 2001:111; Jang *et al.,* 2008:65; Kim *et al.*, 2008:100). It is important for companies to know that the purchase of a brand is intentional and will continue in future (Amine, 1998:307). Commitment is an attachment between parties that leads to the need to sustain a relationship (Fullerton, 2005:98). Brand commitment is viewed as a behavioural intention with affective and cognitive motives (Kim *et al.*, 2008:99). Brand commitment explains the relationship or attitudinal strength between the consumer and the brand which leads to brand loyalty rather than just the simple repeat purchase of a brand which is a behavioural occurrence (Amine, 1998:309). Commitment from an attitudinal perspective can be used to distinguish between true brand loyalty and other buying behaviours (Amine, 1998:309).

Commitment can therefore be established due to two reasons: affective and cognitive motives experienced by the consumer towards the brand (Amine, 1998:309; Fullerton, 2005:99). Commitment from an affective origin includes emotional attachment to the brand, whereas commitment from a cognitive origin or calculative commitment consists of motives such as perceived risk or changes in the performance between competing brands (Amine, 1998:309). Affective commitment can be defined as the degree to which a consumer maintains a relationship with a brand due to the affective connection to the brand. This affective connection is not based on the brand features but rather on the affection, attachment and shared values that the consumer has towards the brand and therefore reduces the likeliness of the consumer to switch to other brands (Amine, 1998:310). Affective commitment

is the centre of the relationship between consumers and brands due to the involvement with the brand on a frequent basis. Affective commitment can also be used to describe the process of loyalty towards a brand, as the consumer is a regular buyer of the brand and has a favourable attitude towards the brand (Louis & Lombart, 2010:118).

Calculative commitment on the other hand is based purely on the value that the consumer attaches to the brand, thus the consumer will stay loyal as long as the benefits of the brand exceeds those offered by competitors (Amine, 1998:310). Continuance or calculative commitment develops when there is a lack of alternative purchase options available to the consumer. It is then also difficult for consumers to end the relationship with the brand due to the limited options available. Calculative commitment is linked to opportunistic behaviour and consumers will continue to search for better or more valuable alternatives (Louis & Lombart, 2010:118).

Brand commitment therefore determines the length of the relationship that the consumer has with the brand and is essential to establish brand loyalty (Knox & Walker, 2001:120; Jang *et al.*, 2008:61). Consumers with a low level of brand commitment will be more tempted to purchase another brand, offering a better deal, discount or if that brand is more visible from the point of purchase (Knox & Walker, 2001:120). Committed consumers on the other hand will make short term sacrifices to defend the durability of their long term use of the product (Louis & Lombart, 2010:118).

Commitment is a key component in order to sustain a worthwhile business-to-consumer relationship and can also be defined as an inclination to resist change and the desire to maintain a relationship (Jang *et al.*, 2008:61). Brand commitment can be viewed as a long term goal for companies which will lead to a competitive advantage. Companies should have the strategic goal to retain their regular consumers which enhances commitment and will make consumers' purchase patterns less volatile and more predictable (Amine, 1998:310, 314).

2.5.8 Relationship proneness

Relationship proneness can be defined as an individual attribute of the buyer and the buyer's tendency to build a relationship with sellers of a particular brand (Moolla, 2010:129). Relationship proneness therefore is part of the consumer's personality (Moolla, 2010:129). Proneness refers to the belief that consumers have a predisposition towards some activity, something or an "increased likelihood" (Parish & Holloway, 2012:62). Parish and Halloway (2010:61), state that some consumers are more "psychologically predisposed" to develop relationships than others.

According to Kim *et al*., (2012:376), relationship-prone consumers have higher levels of trust and commitment than those who are not relationship-prone. Consumer relationship proneness intercedes the relationship between social attachment and the behavioural intentions of consumers (Bloemer *et al.,* 2003:231). The need for both parties to sustain the relationship indicates that relationship proneness has an effect on behavioural intentions (Bloemer *et al.,* 2003:233). Consumers' relationship proneness is also seen as a precursor for commitment and has a positive impact on the purchase behaviour of the consumer (Bloemer *et al.*, 2003:233, 238).

Relationship proneness can also be defined as a customer's deliberate and constant tendency to connect with a particular product through a relationship with that product (De Wulf *et al.*, 2001:38; Bloemer *et al.,* 2003:231). It is also emphasised that this relationship is a conscious decision and not merely based on convenience (De Wulf *et al.,* 2001:38). Therefore, it can be derived that relationship proneness has an influence on the development of brand loyalty within consumers (Moolla, 2010:129).

2.5.9 Brand affect

Brand affect is characterised by two autonomous elements: positive and negative affects. There is a positive relationship between the positive affect a consumer feels towards a product and the willingness to purchase that product (Moolla, 2010:133). The concept "affect" refers to the feelings or emotions of the consumer (Matzler *et al.,* 2006:428). Emotions can be defined as a response to a stimulus and are usually powerful and long-lasting whereas feelings are perceived as less intense and more temporary than emotions (Matzler *et al.,* 2006:428). Brand affect can be defined as the total positive or negative evaluation of the brand (Matzler *et al.*, 2006:428).

Chaudhuri and Holbrook (2001:81) state that brands which are high in consumer affect have a greater consumer attitudinal and purchase loyalty and therefore enjoy a greater market share and companies can charge premium prices for their brands (Chaudhuri & Holbrook, 2001:81; Matzler *et al.,* 2006:427).

Consumers should not only buy a brand repeatedly but should also develop a positive attitude towards the brand to be considered truly brand loyal (Louis & Lombart, 2010:114). Brand attitudes are a central element to build a consumer-brand relationship. Attitudes symbolise the overall evaluation of a brand that tends to direct behaviour towards that brand (Fullerton, 2005:100). Consumers develop an affective response through their usage and ownership of a brand that can be expressed as an attitude. Brand attitudes also represent the degree of satisfaction of consumers' experience with a brand (Fullerton, 2005:100).

Brand affect can therefore be defined as the potential of a brand to provoke a positive emotional response within the consumer as a result of the usage thereof (Chaudhuri & Holbrook, 2001:82). Brand affect leads to a higher level of commitment towards a brand which can lead to an increase in the usage frequency of that brand (Chaudhuri & Holbrook, 2001:82). Brand affect is an essential component that leads to brand loyalty (Matzler *et al.,* 2006:427).

2.5.10 Brand relevance

Brands have to be relevant to ensure brand loyalty amongst consumers (Moolla, 2010:133). Companies are increasing their marketing expenditures and attaching more meaning to brand messages in order to establish brand relevance (Moolla, 2010:134). Brand relevance is thus the alignment of a brand, its brand identity and personality with the needs and wants of its target market and therefore satisfies a specific need of the consumer (Moolla & Bisschoff, 2012b:83).

Aaker (2012:43) states that the only way companies can achieve real growth is to win the brand relevance competition by developing product offerings that are innovative and therefore making competitors irrelevant. New categories of a brand should be developed by adding a "must have" benefit which competitors lack. Aaker (2012:44) defines these "must have" benefits as the uniqueness of the product which includes personality, company values or community benefits. Therefore the offering

must be so appealing to a target segment that any other offering that lacks these benefits will not be considered by consumers. Products should therefore be chosen by consumers due to the irrelevance of competitor's products not because they are not preferred.

Customers recognise brands that are visible, appealing and trustworthy and therefore relevant to the specific product category. The brand relevance strategy involves both transformational and substantial innovation to create new offerings to consumers. In order to achieve brand relevance, companies should be willing to support more ruthless and risky innovations to satisfy unmet needs of the consumer (Aaker, 2012:46, 48).

2.5.11 Brand performance

Companies can achieve greater business performance by enhancing the performance of their brands (De Chernatony *et al.,* 2004:16). Brand performance can be defined as the evaluation of the central product by the consumer after the usage thereof (Moolla, 2010:134). By establishing a better brand performance than competitors, companies can increase their market share and charge a premium price (Chaudhuri & Holbrook, 2001:81). According to Weerawardena *et al*., (2006:40), innovation leads to greater brand performance.

Brand performance can also be seen as an indicator that the company has reached its objectives in the industry or marketplace. Therefore, brand performance can be defined as a measurement of a brand's success (O'Cass & Ngo, 2007:15). Brand performance was found to be related to brand awareness rather than based on brand differentiation (Oliveira-Castro *et al.*, 2008:447).

It has been found that brand loyalty contributes to profitable brand performance outcomes (Chaudhuri & Holbrook, 2001:91). Chaudhuri (1999:2) defines brand performance as the profit potential of a brand which can be expressed through price and market level outcomes. Brand performance can be measured through two ways: the first is the result of brand attitudes and purchase intentions which leads to sales related outcomes. The second is derived from brand attitudes and brand loyalty which enables the firm to charge a premium price. It can therefore be said that brand

performance is influenced by both brand attitudes and brand loyalty (Chaudhuri, 1999:7).

2.5.12 Culture

Culture has an effect on consumers' attitudes, behaviour, values and perceptions. This affects the consumer's decision-making and purchase behaviour. According to Lam (2007:7), there is a lack of research to determine the influence of culture on consumer brand loyalty.

Culture plays a significant role in companies operating in international markets and will influence product development, distribution, pricing and communication strategies (Lam, 2007:7). Lam (2007:8) defines culture as the combined mindset that differentiates one group of people from another. Hofstede, in Lam (2007:8), identified four dimensions that differ among cultural groups, namely: individualism, uncertainty avoidance, masculinity or femininity and power distance. Individualism can be defined as the degree to which individuals within a society are incorporated into groups. The higher the sense of individualism within a person, the less likely that individual is to switch brands. The lower the level of individualism, the more likely a person will follow group norms and thus brand loyalty will be determined by that group (Lam, 2007:15). Uncertainty avoidance can be described as the degree to which a culture influences its members to feel uncomfortable in uncertain situations. It was found that the higher the level of uncertainty avoidance, the higher the level of proneness to brand loyalty. Masculinity is a predilection for wealth, boldness and achievement, while femininity is a preference for humility and relationships. Individuals with a high level of masculinity tend to be less influenced by the cultural group and therefore a brand loyalty decision will be based on those individuals' own decision-making processes. People with a high level of masculinity were also found to be more brand loyal and tended to stay loyal to certain brands. Power distance can be defined as the extent to which individuals within a group accept and anticipate that power in society but also in organisations (Lam, 2007:12). The greater the power distance within individuals the higher the brand loyalty level to brands, expressed by these individuals (Lam, 2007:16).

The cultural aspect of brand loyalty is therefore an important factor and organisations should take this aspect into consideration when identifying the customer's proneness to be brand loyal (Lam, 2007:16).

2.6 CONCLUSION

This chapter concluded the literature review and reported on the following:

- The pharmaceutical industry of South Africa, which focused on the over-the-counter medication industry and the use of generic pharmaceuticals in South Africa.
- The literature review of the history of brand loyalty and how it developed from a single-dimension to a multi-dimensional construct was discussed at length.
- An overview of the brand loyalty models developed by Punniyamoorthy & Raj (2007) and Roy (2011) was given.
- The benefits of brand loyalty to both consumers and companies were analysed.

The conceptual framework developed by Moolla identified twelve influences of brand loyalty, which included: Customer satisfaction, Switching costs, Brand trust, Repeat purchase, Involvement, Commitment, Relationship proneness, Brand affect, Brand relevance, Brand performance and Culture.

Chapter three will discuss the research methodology which includes the data analysis and statistical techniques used to conduct this study. Next, the empirical results will validate the questionnaire before it can be used to measure brand loyalty for pharmaceuticals. The validation is required because the questionnaire was initially developed by Moolla for the FMCG industry, which will now be adapted for the pharmaceutical industry (see Appendix A). Chapter three also provides the quantitative analysis, including the reliability of the data.

CHAPTER 3

RESEARCH FINDINGS AND DISCUSSION

3.1 INTRODUCTION

This chapter presents the results of the empirical study, namely to validate the questionnaire, and then, by means of the validated questionnaire, analyse the data on brand loyalty in the Pharmaceutical industry of South Africa. The fast moving consumer goods (FMCG) brand loyalty model developed by Moolla (2010:197) is employed to do so. More specifically, this chapter reports on:

- Research methodology which includes the demographic analysis, the sampling procedure, questionnaire development, data collection and data analysis.
- Statistical analysis to validate the questionnaire (which includes factor analysis, Cronbach Alpha coefficients, Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity).
- Empirical measurement of the brand loyalty factors by means of descriptive statistics.
- The determination of the reliability coefficients of the data (Cronbach Alpha).
- Discussion of the results.

The aim of this chapter is to state the results of the empirical study regarding the following:

- Whether Moolla's brand loyalty model can be applied to measure brand loyalty for medicine in the pharmaceutical industry,
- Whether patients prefer the original pharmaceutical brand (Gaviscon) or do they prefer the generic brand (Gelacid). For the purpose of this study only one original and one generic brand was used.

- Which factors influence brand loyalty in the consumer's choice of pharmaceutical brands.

To measure pharmaceutical brand loyalty in the over-the-counter medicine market of South Africa the well-known brand, Gaviscon and its generic, Gelacid were chosen for this study. The antacid market is worth R147 million and growing at 8% per annum. Both Gaviscon and Gelacid compete in the plain antacid category which is worth R110 million. Gaviscon is the market leader in the plain antacid category with sales of R67,1 million and growing at 11% per annum (Appendix B: IMSHEALTH, 2012), while the generic Gelacid is worth R9 million and growing at 61% per annum (Appendix C: IMSHEALTH, 2012).

3.2 RESEARCH METHODOLOGY

3.2.1 Sampling procedure

A randomly selected sample of 250 individuals was chosen which included participants from various economic industries. The sample size was adequate as the number of respondents should be a ratio of 14 observations per variable identified to perform factor analysis. When multiplying the 12 variables with the recommended 14 observations, a sample size of 168 is suggested. Therefore the sample size exceeds the recommended size as suggested by Hair as quoted by Moolla (2010:149). The Kaiser-Meyer-Olkin measure of sampling adequacy also confirms the sample size as this value was above 0.700 (Field, 2005:668).

The sample included participants from various provinces in South Africa which included Gauteng; Kwazulu-Natal; North West; Free State; Limpopo; Mpumalanga and the Eastern Cape.

3.2.2 Data collection

The data was collected through a questionnaire developed by Moolla (2010:262) and was distributed in a direct approach and electronically via email or social network platforms like Facebook and LinkedIn. The electronic questionnaire was hosted on the questionnaire service provider www.instant.ly's domain. The questionnaire was

accompanied by a covering letter that explained the purpose of the study and how the questionnaire should be completed. It also explained the difference between a pharmaceutical brand and the generic equivalent thereof. A favourable return rate of 81.2% (203 out of 250 questionnaires) was achieved.

3.2.3 Questionnaire development

Moolla (2010:150) developed a questionnaire to indicate the relevance of 12 factors influencing brand loyalty. Each respondent had to evaluate the magnitude of each of these factors by using a 7-point Likert scale as measuring instrument (Moolla, 2010:150). The Likert scale ranged from strongly agree to strongly disagree. The adapted questionnaire is attached in Appendix A.

The number of items per influence ranged from a minimum of three influences, to a maximum of five (Moolla, 2010:146). The influences per item are displayed in Table 3.1, which follows on the next page.

Table 3.1: Number of items per influence

No.	INFLUENCE	Number of Items
1	Customer Satisfaction	5
2	Switching Costs/ Risk Aversion	5
3	Brand Trust	4
4	Relationship Proneness	4
5	Involvement	4
6	Perceived Value	4
7	Commitment	5
8	Repeat Purchase	5
9	Brand Affect	3
10	Brand Relevance	4
11	Brand Performance	3
12	Culture	4
	Total number of items	50

Source: Moolla (2010:146)

3.2.4 Data analysis and statistical techniques

The data collected from the selected sample was analysed through the statistical program, *Statistical Package for Social Sciences* (SPSS Inc) version 18. The following descriptive statistic techniques were used for the data analysis: Factor analysis; the Kaiser-Meyer-Olkin measure of sampling adequacy; Effect sizes; Cronbach Alpha coefficients; means and Bartlett's test of sphericity.

3.3 EMPIRICAL RESULTS

The empirical results are divided into two sections. Firstly the demographic profile of the respondents will be provided which includes the gender, ethnicity, age, annual income, geographic distribution and industry of employment. Secondly the quantitative analysis of the data will be presented which includes the validity of the research instruments, the reliability of the results obtained, the importance of the research variables and a summary of the mean values.

3.3.1 Demographic profile

The demographic profile is displayed in Figure 3.1 to 3.6.

Figure 3.1: Gender profile

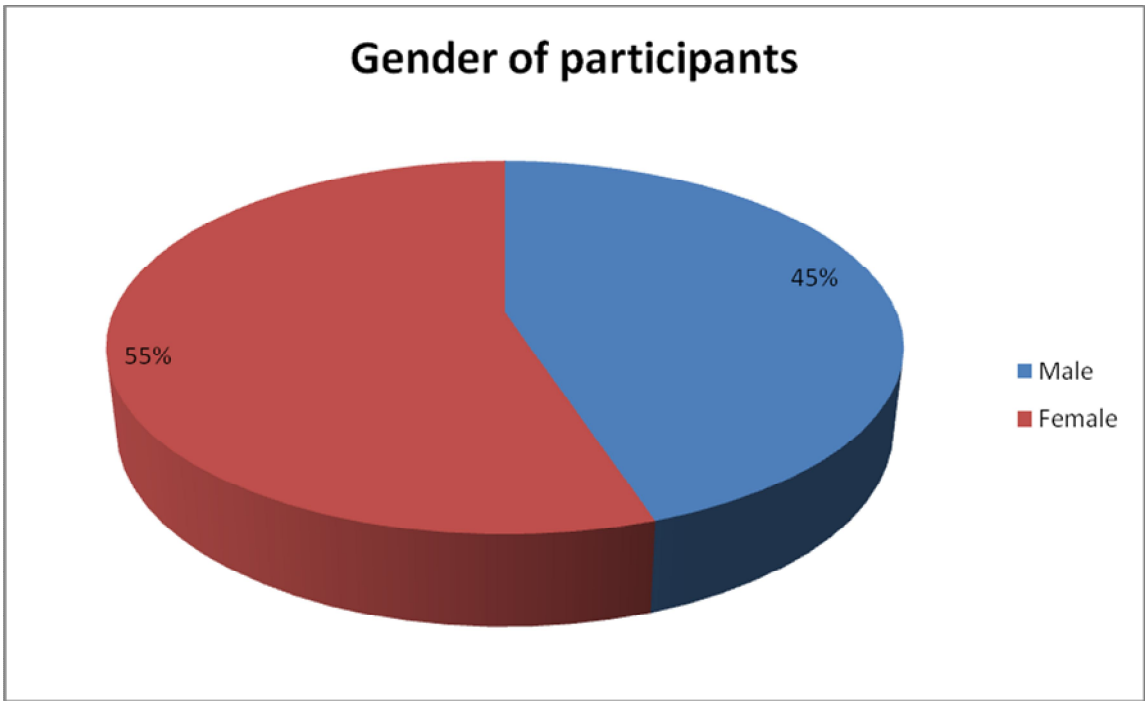
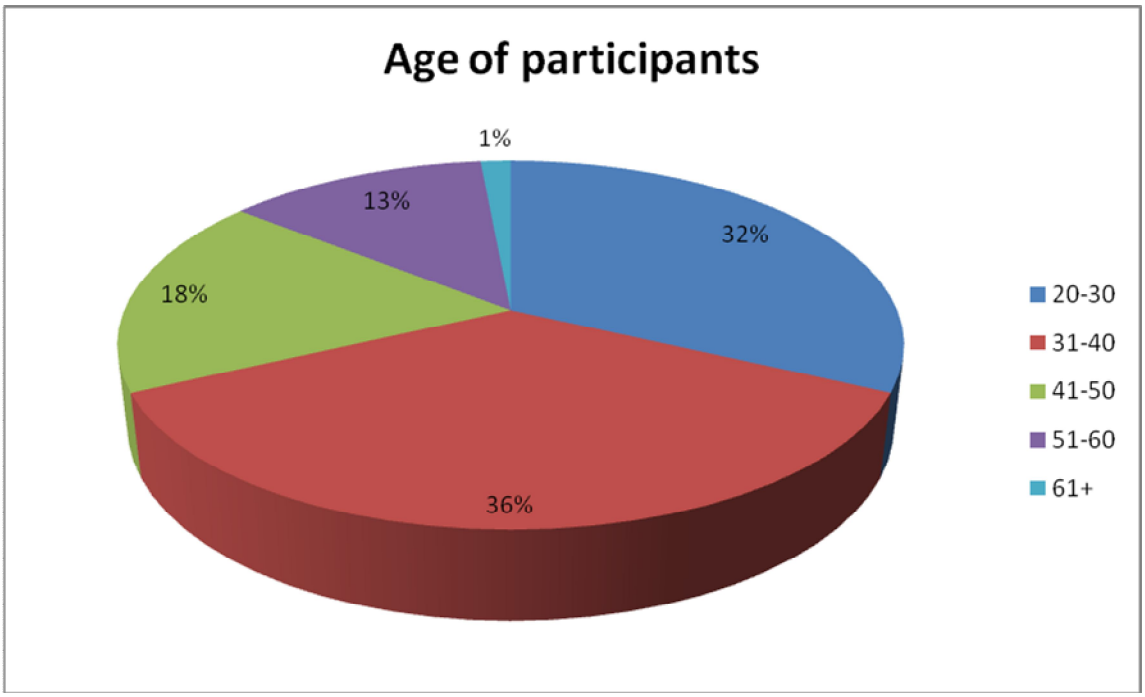


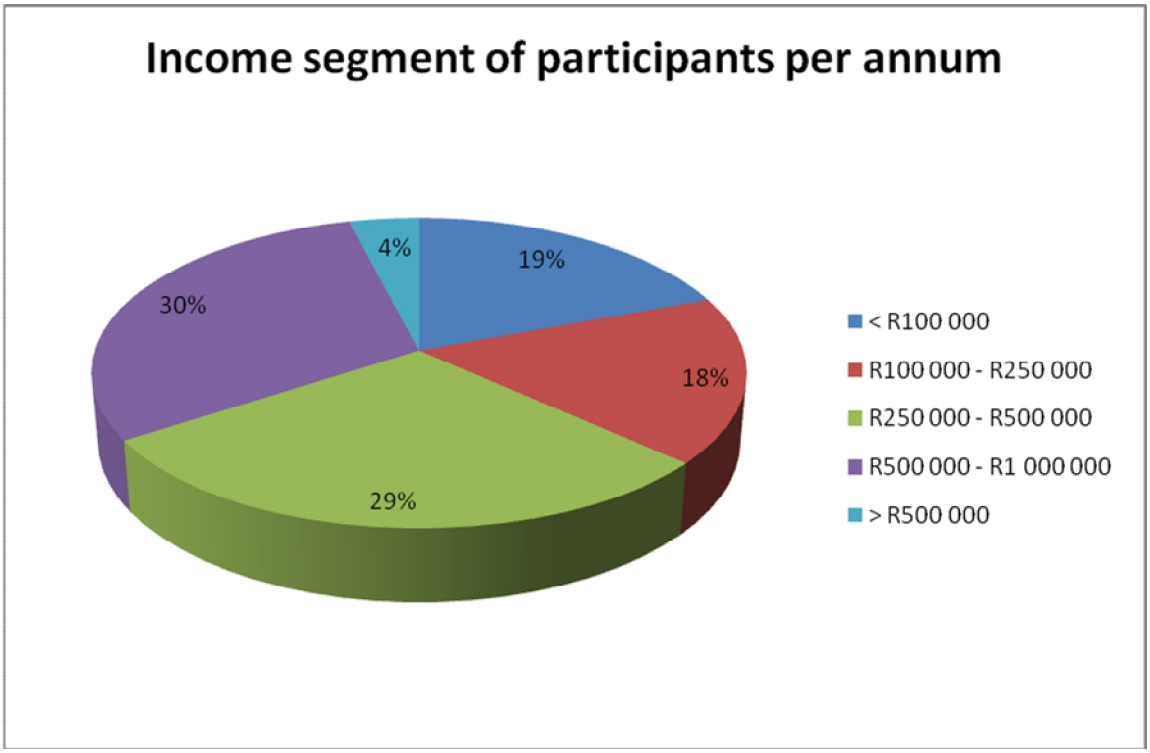
Figure 3.1 shows that 45% of the participants were male and 55% of the participants were female. This split between the genders displays a good representation of both gender groups in South Africa.

Figure 3.2: Age of the participants



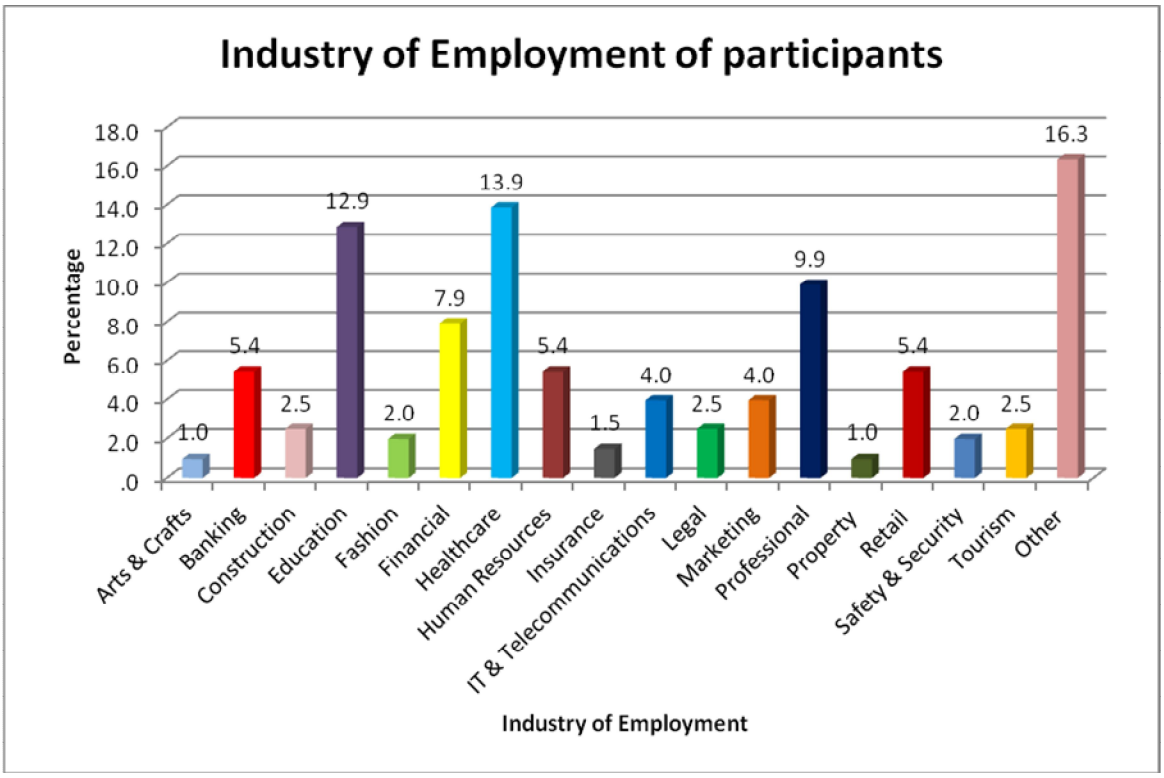
As shown in Figure 3.2 the majority of the participants were aged between 31 and 40 years with 36%, followed closely by the participants aged 20 to 30 years with 32%.

Figure 3.3: Income segment of the participants per annum



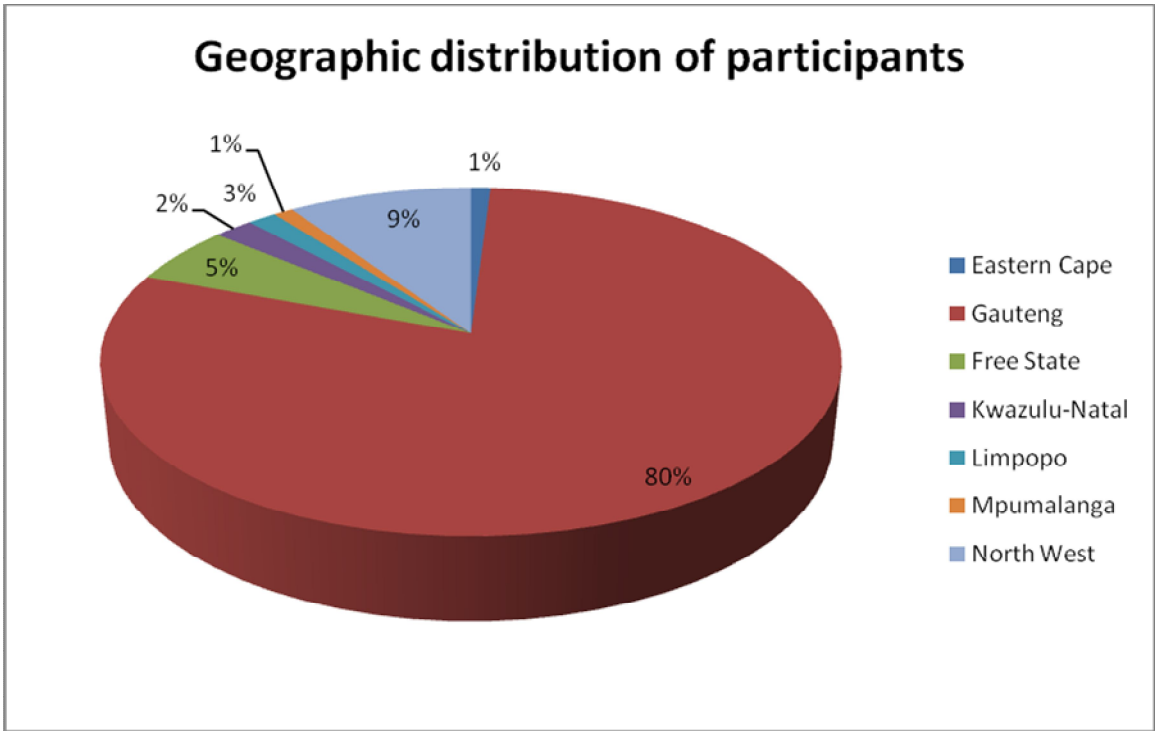
As shown in Figure 3.3 on the previous page, 30% of the participants earned between R500 000 to R1000 000 per annum, followed by 29% of the participants earning between R250 000 to R500 000 per annum. This indicated that the majority of the participants earned above average salaries and were financially secured.

Figure 3.4: Industry of employment of participants



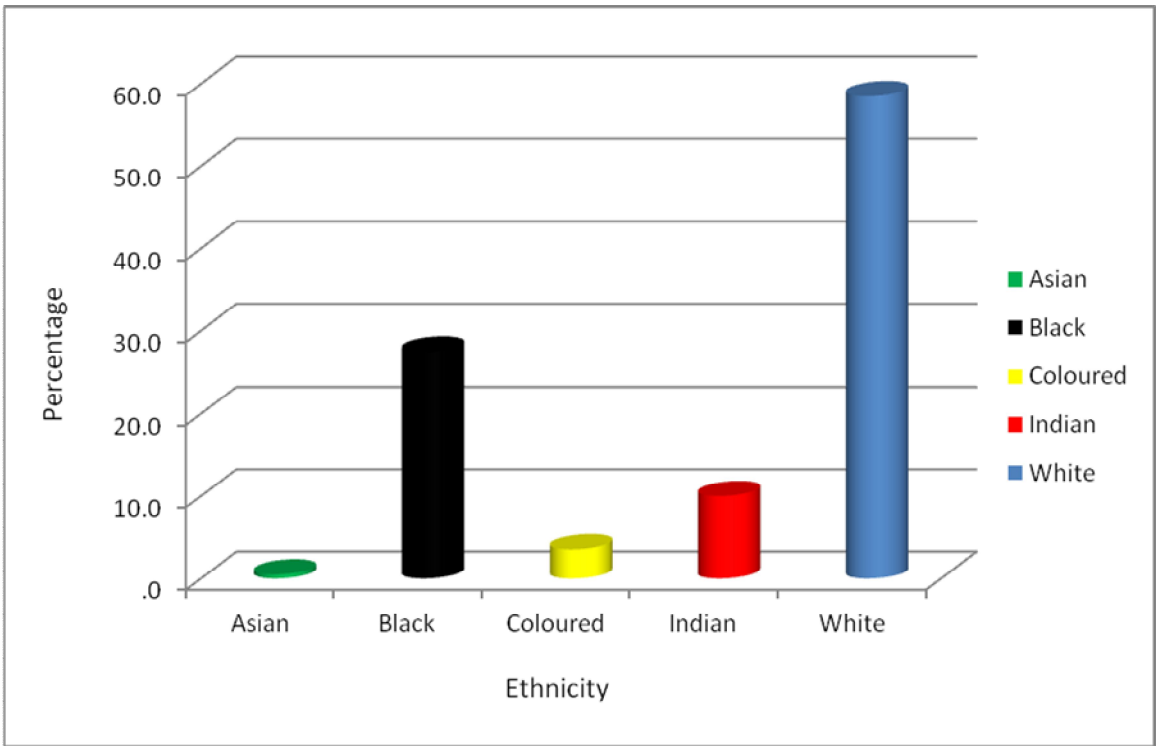
As seen in Figure 3.4, the sample was representative of a wide variety of industries in South Africa. The industries included in the survey were the following: Healthcare (13.9%); IT & Telecommunications (4%); Marketing (4%); Education (12.9%); Insurance (1.5%); Human resources (5.4%); Arts and Crafts (1%); Banking (5.4%); Construction (2.5%); Fashion (2%); Financial (7.9%); Legal (2.5%); Property (1%); Retail (5.4%); Safety and security (2%); Tourism (2.5%), Professional (9.9%) and Other professions (16.3%). From these figures it is clear that most of the participants were from the Healthcare and Education industries, excluding the participants from other professions.

Figure 3.5: Geographic distribution of participants



The geographic distribution of the participants is summarised in Figure 3.5. Participants were from various provinces which included Gauteng, Eastern Cape, Free State, Kwazulu-Natal, Limpopo, Mpumalanga and the North West province. Gauteng had the most respondents by far with 80% followed by the North West province with 9%. Since most participants were from the Gauteng province, this study did not represent all of the provinces in South Africa equally.

Figure 3.6: Ethnicity of participants



As shown in Figure 3.6, most respondents were White (58.5%), followed by the other ethnic groups Black (27.5%), Coloured (3.5%), Indian (10%) and Asian (0.5%).

In summary of the demographic profile of the respondents, most respondents were female, between the ages of 31 to 40 years, white, working in the Healthcare industry, residing in Gauteng and earning between R500 000 to R1000 000 per annum.

3.3.2 Quantitative analysis

3.3.2.1 Validity of research instruments

Validity refers to the ability of a study to answer a question scientifically and therefore it is critical for a test to be suitable so that the results can be accurately applied and interpreted (Moolla, 2010:151; Bisschoff & Kade, 2010:5). Validity can also be defined as the degree to which a test measures what it states to measure (Bisschoff & Kade, 2010:5). To determine the validity of the research questionnaire exploratory factory analysis was used. The aim of this study was to provide practical

evidence that supports Moolla's brand loyalty framework as basis for the developed research questionnaire.

- **Factor analysis**

  To determine the interrelationships among variables in this study, factor analysis was used (Moolla, 2010:159). Factor analysis is an interdependence measure so that an entire set of interdependent variables are examined, without distinguishing between dependent and independent variables. Factor loadings of 0.40 are regarded as satisfactory (Bisschoff & Kade, 2010:7; Field, 2005:666-667).

- **Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy**

  The Kaiser-Meyer-Olkin measure of sampling adequacy is used to determine the suitability of factor analysis and whether the partial correlations among the different variables are small (Bisschoff & Kade, 2010:8). The Kaiser-Meyer-Olkin measure of sampling adequacy presents an index ranging from 0 to 1 of the amount of variance among the different variables where a value of 0 indicates that factor analysis is not suitable and a value of 1 indicates that factor analysis is suitable for the study (Field, 2005:746). KMO values smaller than 0.5 indicates that factor analysis is not suitable and a KMO value of 0.6 should be present before factor analysis can be considered. Values between 0.5 and 0.7 are considered average, values between 0.7 and 0.8 are good and values between 0.9 and 1.0 are excellent (Bisschoff & Kade, 2010:8).

- **Bartlett's test of sphericity**

  The Bartlett test of sphericity displays the strength of the relationship between variables and indicates whether the data is suitable for factor analysis (Bisschoff & Kade, 2010:8). The Bartlett test of sphericity tests the null hypothesis that the variables are uncorrelated in the population correlation matrix (Bisschoff & Kade, 2010:8). The significance level for the Bartlett test of sphericity is 0.000, which indicates that the variables are suitable for factor analysis.

3.3.2.1.1 Customer satisfaction (CUS)

The customer satisfaction analysis is summarised in Table 3.2 and Table 3.3 below.

Table 3.2: KMO and Bartlett's test of customer satisfaction

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.802	0.842
Bartlett's Test of Sphericity	Approx. Chi-Square	334.691	483.087
	Df	10	10
	Sig.	.000	.000

The Kaiser-Meyer-Olkin measure of sampling adequacy value is greater than the required 0.700 value as it is 0.802 for Gaviscon and 0.842 for Gelacid. This indicates that the data is suitable for factor analysis. The Bartlett score is also satisfactory at 0.000 for both Gaviscon and Gelacid.

Table 3.3: Factor analysis of customer satisfaction

Factor analysis of customer satisfaction			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
CUS01	I am very satisfied with the listed OTC brand I purchase	0.708	0.719
CUS02	Distinctive product attributes in OTC keep me brand loyal	0.862	0.804
CUS03	My loyalty towards a particular OTC brand increases when I am satisfied with that brand	0.731	0.879
CUS04	I do not repeat a purchase if I am dissatisfied with a particular OTC brand	**0.358**	0.675
CUS05	I attain pleasure from the OTC brands I am loyal towards	0.680	0.713
Cronbach Alpha		0.797	0.866
Total variance explained		47.382%	57.979

All the questions of customer satisfaction relate to one factor as indicated by the factor analysis of the customer satisfaction influence. However, question CUS04 of Gaviscon is eliminated from the analysis due to the low factor loading (lower than the minimum factor loading of 0.400). This indicates that customer satisfaction is

adequately measured by questions CUS01, CUS02, CUS03 and CUS05 for Gaviscon. For Gelacid, questions CUS01, CUS02, CUS03, CUS04 and CUS05 are adequate to measure customer satisfaction. The total variance of 47.382% is explained by one factor for Gaviscon and 57.979% for Gelacid. Both the Gaviscon and Gelacid factors show satisfactory reliability as their respective Cronbach Alpha coefficients exceed 0.700.

3.3.2.1.2 Switching costs (SCR)

The switching cost analysis is summarised in Table 3.4 below and Table 3.5 on the next page.

Table 3.4: KMO and Bartlett's test of switching costs

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.728	.749
Bartlett's Test of Sphericity	Approx. Chi-Square	192.449	230.796
	Df	10	10
	Sig.	.000	.000

The Kaiser-Meyer-Olkin measure of sampling adequacy value of Gaviscon and Gelacid indicates that the data is suitable for factor analysis. Both these values are greater than the required 0.700, the value for Gaviscon is 0.728 and for Gelacid the value is 0.749. The Bartlett score is satisfactory at 0.000 for both Gaviscon and Gelacid.

Table 3.5: Factor analysis of switching costs (SCR)

Factor analysis of switching costs			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
SCR01	I do not switch OTC brands because of the high cost implications	.691	.728
SCR02	I do not switch OTC brands because of the effort required to reach a level of comfort	.596	.742
SCR03	I avoid switching OTC brands due to the risks involved	.605	.502
SCR04	I switch OTC brands according to the prevailing economic conditions	.455	.538
SCR05	I prefer not to switch OTC brands as I stand to lose out on the benefits from loyalty programmes	.565	.564
Cronbach Alpha		.718	.751
Total variance explained		34.491%	38.788%

Questions SCR01 to SCR05 for Gaviscon and Gelacid relate to one factor as indicated by the factor analysis. The factor loading for both these products is satisfactory as it exceeds the minimum factor loading of 0.400. This indicates that switching costs is adequately measured by questions SCR01, SCR02, SCR03, SCR04 and SCR05 for Gaviscon and Gelacid. The total variance of 34.491% is explained by one factor for Gaviscon. For Gelacid the total variance of 38.788% is explained by one factor as well. Gaviscon shows satisfactory reliability as the Cronbach Alpha coefficient exceeds 0.700 with a value of 0.718. Gelacid also shows satisfactory reliability as the Cronbach Alpha coefficient exceeds 0.70 with a value of 0.751.

3.3.2.1.3 Brand trust (BTS)

The brand trust analysis is summarised in Table 3.6 and Table 3.7 below.

Table 3.6: KMO and Bartlett's test of brand trust (BTS)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.789	.771
Bartlett's Test of Sphericity	Approx. Chi-Square	357.342	424.312
	Df	6	6
	Sig.	.000	.000

The Kaiser-Meyer-Olkin measure of sampling adequacy value of Gaviscon and Gelacid both exceed the required value of 0.700. This indicates that the data for both of these products is suitable for factor analysis. Gaviscon's KMO is 0.789 and Gelacid's KMO is 0.771. The Bartlett score is satisfactory for both, with a value of 0.000.

Table 3.7: Factor analysis of brand trust (BTS)

Factor analysis of brand trust			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
BTS01	I trust the OTC brands I am loyal towards	.749	.766
BTS02	I have confidence in the OTC brands that I am loyal to	.877	.927
BTS03	The OTC brands I purchase has consistently high quality	.823	.787
BTS04	The reputation of an OTC brand is a key factor in me maintaining brand loyalty	.610	.680
Cronbach Alpha		.850	.868
Total variance explained		59.472%	63.183%

Both Gaviscon and Gelacid show satisfactory reliability as their respective Cronbach Alpha coefficients exceed 0.700. Gaviscon's Cronbach Alpha coefficient is 0.850 and Gelacid's Cronbach Alpha coefficient is 0.868. All the questions of brand trust relate to one factor for Gaviscon and Gelacid as indicated by the factor analysis data and

all have factor loadings higher than 0.400. This means that brand trust is adequately measured for both these products by questions BTS01, BTS02, BTS03 and BTS04. The total variance of 59.472% is explained by one factor for Gaviscon and for Gelacid, the total variance of 63.183% is explained by one factor.

3.3.2.1.4 Repeat purchase (RPR)

The repeat purchase analysis is summarised in Table 3.8 and Table 3.9 below.

Table 3.8: KMO and Bartlett's test of repeat purchase (RPR)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.783	.761
Bartlett's Test of Sphericity	Approx. Chi-Square	286.258	241.457
	Df	6	6
	Sig.	.000	.000

The data is suitable for factor analysis as indicated by the Kaiser-Meyer-Olkin measure of sampling adequacy value, which exceeds 0.700. The KMO value for Gaviscon is 0.783 and for Gelacid it is 0.761. The Bartlett score is satisfactory for both Gaviscon and Gelacid, with a value of 0.000.

Table 3.9: Factor analysis of repeat purchase (RPR)

Factor analysis of repeat purchase			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
RPR01	I prefer to maintain a long term relationship with an OTC brand	.612	.598
RPR02	I maintain a relationship with an OTC brand in keeping with my personality	.803	.758
RPR03	I maintain a relationship with an OTC brand that focuses and communicates with me	.802	.822
RPR04	I have a passionate and emotional relationship with the OTC brands I am loyal to	.718	.627
Cronbach Alpha		.824	.787
Total variance explained		54.493%	50.055%

Questions RPR01 to RPR04 all relate to one factor as seen in Table 3.9 on the previous page. All of the questions have satisfactory factor loadings, exceeding 0.400 for both Gaviscon and Gelacid. This indicates that questions RPR01, RPR02, RPR03 and RPR04 are adequate to measure repeat purchases. Both these products also have a satisfactory Cronbach Alpha coefficient which exceeds 0.700. The Cronbach Alpha coefficient of Gaviscon is 0.824 and for Gelacid it is 0.787 which indicates satisfactory reliability of the data (Field, 2005:658). The total variance explained is at 54.493% for Gaviscon and 50.055% for Gelacid.

3.3.2.1.5 Involvement (INV)

The analysis for involvement is summarised in Table 3.10 below and Table 3.11 on the next page.

Table 3.10: KMO and Bartlett's test of involvement (INV)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.636	.730
Bartlett's Test of Sphericity	Approx. Chi-Square	140.990	181.654
	Df	6	6
	Sig.	.000	.000

The Kaiser-Meyer-Olkin score is slightly lower than the 0.700 requirement for Gaviscon with 0.636; however, the Bartlett's score is satisfactory at 0.000. Therefore the data of Gaviscon is suitable for factor analysis. The Kaiser-Meyer-Olkin score is above the requirement of 0.700 for Gelacid with 0.730 and Gelacid has a satisfactory Bartlett's score of 0.000, which indicates that the data of Gelacid is suitable for factor analysis.

Table 3.11: Factor analysis of involvement (INV)

Factor analysis of involvement				
		GAVISCON		GELACID
CODE	QUESTION	FACTOR 1	FACTOR 2	FACTOR 1
INV01	Loyalty towards an OTC brand increases the more I am involved with it	.618	***	.733
INV02	Involvement with an OTC brand intensifies my arousal and interest towards that brand	.895	***	.781
INV03	I consider other OTC brands when my involvement with my OTC brand diminishes	.478	***	.559
INV04	My choice of an OTC brand is influenced by the involvement others have with their OTC brand	***	.418	.520
Cronbach Alpha		.624	***	.741
Total variance explained: Factor 1		38.904%		43.271%
Total variance explained: Factor 2		45.836%		***

As displayed in Table 3.11 above, the total variance explained for Gaviscon is 84.74% with sub-factor 1 explaining 38.904% and sub-factor 2 explaining 45.846% of the variance. The total variance explained by one factor for Gelacid is 43.271%. All of the questions (INV01 to INV04) measure involvement satisfactorily for both Gaviscon and Gelacid as they have a factor loading higher than the minimum requirement of 0.400. The factor loading for Gaviscon indicates that questions INV01, INV02 and INV03 loaded onto factor 1 and question INV04 loaded onto factor 2. The factor analysis of involvement for Gaviscon indicates that there are two separate factors within the influence. Therefore the influence Involvement, can be seen as dualistic. The Cronbach Alpha coefficient for Gaviscon is 0.624 which is slightly lower than the required 0.700, but reliability is still satisfactory. Gelacid shows satisfactory reliability as the Cronbach Alpha coefficient exceeds 0.700 with 0.741.

3.3.2.1.6 Perceived value (PVL)

The analysis of perceived value is summarised in Table 3.12 and Table 3.13 below.

Table 3.12: KMO and Bartlett's test of perceived value (PVL)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.640	.707
Bartlett's Test of Sphericity	Approx. Chi-Square	131.647	170.630
	Df	6	6
	Sig.	.000	.000

The Kaiser-Meyer-Olkin score is slightly lower than the 0.700 requirement with 0.640 for Gaviscon and slightly higher than the requirement for Gelacid with 0.707. Both the Bartlett's scores are equally satisfactory at 0.000. This indicates that the data can be used to perform factor analysis.

Table 3.13: Factor analysis of perceived value (PVL)

Factor analysis of perceived value			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
PVL01	My OTC brand is based on product quality and expected performance	**.361**	.565
PVL02	I have an emotional attachment with the OTC brands I am loyal towards	.769	.718
PVL03	Price worthiness is a key influence in my loyalty towards OTC brands	.405	.615
PVL04	The OTC brands that I am loyal to enhances my social self concept	.753.	.666
Cronbach Alpha		.651	.733
Total variance explained		36.321%	41.393%

Questions PVL01, PVL02, PVL03 and PVL04 all relate to one factor as indicated in Table 3.13 above. However, question PVL01 of Gaviscon is eliminated from the analysis due to a low factor loading (lower than the minimum requirement of 0.400). this indicates that perceived value is adequately measured by questions PVL02,

PVL03 and PVL04 for Gaviscon as these have a factor loading higher than 0.400. Questions PVL01, PVL02, PVL03 and PVL04 are adequate to measure perceived value for Gelacid as their factor loadings exceed 0.400. The total variance of 36.321% is explained by one factor for Gaviscon and the total variance of 41.393% is explained by one factor for Gelacid. The Cronbach Alpha coefficient for Gaviscon is slightly lower at 0.651 than the required 0.700; however, for Gelacid the Cronbach Alpha coefficient exceeds 0.700 with 0.733. This indicates that the data shows satisfactory reliability.

3.3.2.1.7 Commitment (COM)

The analysis for commitment is summarised in Table 3.14 below and Table 3.15 on the next page.

Table 3.14: KMO and Bartlett's test of commitment (COM)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.735	.808
Bartlett's Test of Sphericity	Approx. Chi-Square	267.745	357.558
	Df	10	10
	Sig.	.000	.000

The data is suitable for factor analysis as the Kaiser-Meyer-Olkin measure of sampling adequacy is higher than the requirement of 0.700 with 0.735 for Gaviscon and 0.808 for Gelacid. Both the Bartlett's scores for Gaviscon and Gelacid are satisfactory at 0.000.

Table 3.15: Factor analysis of commitment (COM)

Factor analysis of commitment			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
COM01	I have pledged my loyalty to particular OTC brands	.617	.606
COM02	I do not purchase other OTC brands if my OTC brand is unavailable	.504	.547
COM03	I identify with the OTC brands that I consume and feel as part of the brand community	.701	.767
COM04	The more I become committed to an OTC brand, the more loyal I become	.746	.760
COM05	I remain committed to OTC brands even through price increases and declining popularity	.596	.785
Cronbach Alpha		.769	.821
Total variance explained		40.749%	48.944

The factor analysis of the commitment influence indicates that the entire set of questions (COM01 to COM05) have factor loadings exceeding 0.400 and can be used as none of the questions should be excluded. All of these questions loaded onto one factor and therefore represents a pure influence. The Cronbach Alpha coefficients for both Gaviscon and Gelacid show satisfactory reliability as it exceeds 0.700. The total variance of 40.749% is explained by one factor for Gaviscon and the total variance of 48.944% is explained by one factor for Gelacid.

3.3.2.1.8 Relationship proneness (RPS)

The relationship proneness analysis is summarised in Table 3.16 below.

Table 3.16: KMO and Bartlett's test of relationship proneness (RPS)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.722	.703
Bartlett's Test of Sphericity	Approx. Chi-Square	136.944	106.762
	Df	10	10
	Sig.	.000	.000

As shown in Table 3.16 on the previous page, the Kaiser-Meyer-Olkin score of relationship proneness is higher than the required 0.700 with 0.722 for Gaviscon and 0.703 for Gelacid. The Bartlett's score is equally satisfactory for both Gaviscon and Gelacid at 0.000. This indicates that the data is suitable for factor analysis.

The factor analysis for relationship proneness is summarised in Table 3.17 below.

Table 3.17: Factor analysis of relationship proneness (RPS)

Factor analysis of relationship proneness			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
RPS01	My loyalty towards OTC brands is purely habitual	.540	.484
RPS02	I do not necessarily purchase the same OTC brands all the time	.418	.517
RPS03	I always purchase new OTC brands as soon as they are available	.746	.546
RPS04	I establish an OTC brand purchasing pattern and seldom deviate from it	.513	.572
RPS05	Loyalty programmes are the reason I repeat OTC brand purchases	.469	.400
Cronbach Alpha		.666	.629
Total variance explained		30.123%	25.757%

All the questions (RPS01, RPS02, RPS03, RPS04 and RPS05) loaded onto one factor and have higher factor loadings than the required 0.400. Therefore, relationship proneness is adequately measured by all questions for both Gaviscon and Gelacid. The total variance explained is 30.123% for Gaviscon and 25.757% for Gelacid. The Cronbach Alpha coefficient for both Gaviscon and Gelacid is slightly lower than the required 0.700, with Gaviscon at 0.666 and Gelacid at 0.629. But the coefficients still show satisfactory reliability.

3.3.2.1.9 Brand affect (BAF)

The analysis of brand affect is summarised in Table 3.18 and Table 3.19 below.

Table 3.18: KMO and Bartlett's test of brand affect (BAF)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.707	.685
Bartlett's Test of Sphericity	Approx. Chi-Square	208.666	181.461
	Df	3	3
	Sig.	.000	.000

The Kaiser-Meyer-Olkin score is slightly higher than the 0.700 requirement for Gaviscon with 0.707 and slightly lower for Gelacid with 0.685. The Bartlett's score is equally satisfactory for both Gaviscon and Gelacid at 0.000. This means that the data of brand affect is suitable for factor analysis.

Table 3.19: Factor analysis of brand affect (BAF)

Factor analysis of brand affect			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
BAF01	I attain a positive emotional response through the usage of an OTC brand	.839	.778
BAF02	The OTC brand I am loyal towards makes a difference in my life	.779	.832
BAF03	I am distressed when I am unable to purchase/use a particular OTC brand	.702	.627
Cronbach Alpha		.816	.787
Total variance explained		60.158%	56.345%

The factor analysis of the brand affect influence has a factor loading which exceeds the required 0.400 and therefore all questions (BAF01 to BAF03) should be included to measure brand affect. Both Gaviscon and Gelacid show satisfactory reliability as their respective Cronbach Alpha coefficients exceed 0.700 with 0.816 for Gaviscon and 0.787 for Gelacid. All of the questions (BAF01 to BAF03) loaded onto one factor

which means that the influence is pure. The total variance of 60.158% is explained by one factor for Gaviscon and 56.345% for Gelacid.

3.3.2.1.10 Brand relevance (BRV)

The brand relevance analysis is summarised in Table 3.20 and Table 3.21 below.

Table 3.20: KMO and Bartlett's test of brand relevance (BRV)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.732	.746
Bartlett's Test of Sphericity	Approx. Chi-Square	261.536	196.690
	Df	6	6
	Sig.	.000	.000

The data is suitable for factor analysis as the Kaiser-Meyer-Olkin score is higher than the requirement of 0.700 for Gaviscon with 0.732 and Gelacid with 0.746. The Bartlett's score is satisfactory for both Gaviscon and Gelacid at 0.000.

Table 3.21: Factor analysis of brand relevance (BRV)

Factor analysis of brand relevance			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
BRV01	The OTC brands that I am loyal towards stand for issues that actually matter	.643	.715
BRV02	The OTC brands that I am loyal towards have freshness about them and portray positive significance	.900	.822
BRV03	I know that an OTC brand is relevant through the brand messages communicated	.787	.655
BRV04	The OTC brands that I am loyal towards are constantly updating and improving so as to stay relevant	.432	.451
Cronbach Alpha		.777	.752
Total variance explained		50.755%	45.467%

As shown in Table 3.21 on the previous page, the factor analysis of the brand relevance influence identifies one factor for Gaviscon and Gelacid. In addition, all the questions (BRV01 to BRV04) have factor loadings that exceed 0.400 and therefore none of the questions should be excluded. Both Gaviscon and Gelacid show satisfactory reliability as their respective Cronbach Alpha coefficients exceed 0.700. The total variance of 50.755% is explained by one factor for Gaviscon. The total variance of 45.467% is explained by one factor for Gelacid.

3.3.2.1.11 Brand performance (BPF)

The analysis of brand performance is summarised in Table 3.22 below and Table 3.23 on the next page.

Table 3.22: KMO and Bartlett's test of brand performance (BPF)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.645	.655
Bartlett's Test of Sphericity	Approx. Chi-Square	74.201	114.389
	Df	3	3
	Sig.	.000	.000

The Kaiser-Meyer-Olkin score for both Gaviscon and Gelacid is slightly lower than the 0.700 requirement with 0.645 for Gaviscon and 0.655 for Gelacid. The data will be used in factor analysis with the acknowledgement that the adequacy of the Bartlett's score is equally satisfactory at 0.000 for both Gaviscon and Gelacid. This indicates that the data is suitable for factor analysis.

Table 3.23: Factor analysis of brand performance (BPF)

Factor analysis of brand performance			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
BPF01	I evaluate an OTC brand based on perceived performance	.535	.632
BPF02	I will switch OTC brand loyalty should a better performing OTC brand be available	.672	.809
BPF03	I am loyal only towards the top performing OTC brand	.620	.577
Cronbach Alpha		.636	.708
Total variance explained		37.406%	46.216%

All the questions of brand performance relate to one factor as indicated by the factor analysis of the brand performance influence with factor loadings exceeding 0.400. This indicates that brand performance is adequately measured by questions BPF01, BPF02 and BPF03 for both Gaviscon and Gelacid. The Cronbach Alpha coefficient for Gaviscon is slightly lower than the required 0.700 with 0.636. The Cronbach Alpha coefficient for Gelacid is slightly higher than the required 0.700 with 0.708. This indicates that the data shows satisfactory reliability for both Gaviscon and Gelacid. The total variance is explained at 37.406% for Gaviscon and 46.216% for Gelacid by one factor.

3.3.2.1.12 Culture (CUL)

The analysis of the culture influence is summarised in Table 3.24 below and Table 3.25 on the next page.

Table 3.24: KMO and Bartlett's test of culture (CUL)

KMO and Bartlett's test		Gaviscon	Gelacid
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.729	.744
Bartlett's Test of Sphericity	Approx. Chi-Square	192.079	205.891
	Df	6	6
	Sig.	.000	.000

As shown in Table 3.24 on the previous page, the data is suitable for factor analysis as the Kaiser-Meyer-Olkin score is greater than the required 0.700 for Gaviscon at 0.729 and for Gelacid at 0.744. The Bartlett's score is equally satisfactory for both Gaviscon and Gelacid at 0.000 which also indicates the adequacy of the data for factor analysis.

Table 3.25: Factor analysis of culture (CUL)

Factor analysis of culture			
CODE	**QUESTION**	**GAVISCON FACTOR 1**	**GELACID FACTOR 1**
CUL01	My choice of OTC brands are in keeping with the choice made by other members in my race group	.771	.777
CUL02	My loyalty towards an OTC brand is based on the choice of OTC brand used by my family	.648	.706
CUL03	Religion plays a role in my choice and loyalty of OTC brands	.691	.729
CUL04	Family used OTC brands indirectly assure brand security and trust	.523	.458
Cronbach Alpha		.753	.758
Total variance explained		44.107%	46.066%

As displayed in Table 3.25 above, all the questions of the culture influence relate to one factor with a factor loading higher than the required 0.400. Therefore the culture influence is adequately measured by questions CUL01, CUL02, CUL03 and CUL04. All of these questions should be used to measure the culture influence and none should be eliminated. The total variance of 44.107% is explained by one factor for Gaviscon and 46.066% for Gelacid. Both Gaviscon and Gelacid show satisfactory reliability as their respective Cronbach Alpha coefficients exceed 0.700.

3.4 RELIABILITY OF RESULTS

Reliability is defined as the consistency of a group of measuring instruments. Reliability also refers to the quality of the measurement (Bisschoff & Kade, 2010:6).

One of the reliability statistical measures is the Cronbach Alpha coefficient (α). The Cronbach Alpha coefficient measures the reliability and the internal consistency of the data (Field, 2005:658; Bisschoff & Kade, 2010:6).

According to George and Mallery (2003:231), the following guidelines in Table 3.26 can be used when interpreting Cronbach Alpha coefficients:

Table 3.26: Cronbach alpha coefficient classification

CRONBACH ALPHA COEFFICIENT	CLASSIFICATION
α > 0.9	Excellent
α > 0.8	Good
α > 0.7	Acceptable
α > 0.6	Questionable
α > 0.5	Poor
α < 0.5	Unacceptable

Source: George and Mallery (2003:231)

Table 3.27 follows on the next page and summarises the reliability of the brand loyalty influences. The table includes the item code, the description of the influence, Cronbach Alpha coefficients and the number of items per influence.

Table 3.27: Reliability of the influences and their factors

CODE	DESCRIPTION	PRODUCT	QUESTIONS	Cronbach Alpha	N of items
CUS	Customer Satisfaction	Gaviscon	ALL	0.797	5
		Gelacid	ALL	0.866	5
SCR	Switching Costs	Gaviscon	ALL	0.718	5
		Gelacid	ALL	0.751	5
BTS	Brand Trust	Gaviscon	ALL	0.850	4
		Gelacid	ALL	0.868	4
RPR	Repeat Purchase	Gaviscon	ALL	0.824	4
		Gelacid	ALL	0.787	4
INV	Involvement	Gaviscon INV-01	Q1, Q2.Q3	0.624	3
		Gaviscon INV-02	Q4	***	1
		Gelacid	ALL	0.741	4
PVL	Perceived Value	Gaviscon	ALL	0.651	4
		Gelacid	ALL	0.733	4
COM	Commitment	Gaviscon	ALL	0.769	5
		Gelacid	ALL	0.821	5
RPS	Relationship Proneness	Gaviscon	ALL	0.666	5
		Gelacid	ALL	0.629	5
BAF	Brand Affect	Gaviscon	ALL	0.816	3
		Gelacid	ALL	0.787	3
BRV	Brand Relevance	Gaviscon	ALL	0.777	4
		Gelacid	ALL	0.752	4
BPF	Brand Performance	Gaviscon	ALL	0.636	3
		Gelacid	ALL	0.708	3
CUL	Culture	Gaviscon	ALL	0.753	4
		Gelacid	ALL	0.758	4

As seen in Table 3.27 on the previous page, it is clear that most factors did return satisfactory reliability coefficients as they were above the 0.700 level of reliability. However according to the Cronbach Alpha coefficient classification in Table 3.26, some influences' reliability can be questioned, as these influences had a reliability coefficient higher than 0.600 but lower than 0.700. However a reliability coefficient of 0.600 can be regarded as significant (Cortina (1993) in Field, 2005:666). Therefore it can be concluded that all factors with reliability coefficients above 0.700 are reliable to measure brand loyalty and those above 0.600 are significant.

For Gaviscon the following can be noted regarding the Cronbach Alpha coefficients:

- Brand trust, Brand affect and Repeat purchase had Cronbach Alpha values higher than 0.8 ($\alpha > 0.8$) and can therefore be considered as "Good" in terms of reliability.

- Customer satisfaction, Brand relevance, Switching costs, Commitment and Culture had Cronbach Alpha values higher than 0.7 ($\alpha > 0.7$) and can therefore be considered as "Acceptable" in terms of reliability.

- Involvement, Perceived value, Relationship proneness and Brand performance had Cronbach Alpha values higher than 0.6 ($\alpha > 0.6$) but lower than 0.7 and can therefore be considered as "Questionable" in terms of reliability but still acceptable.

For Gelacid the following can be noted regarding the Cronbach Alpha coefficients:

- Customer satisfaction, Brand trust and Commitment had Cronbach Alpha values higher than 0.8 ($\alpha > 0.8$) and can therefore be considered as "Good" in terms of reliability.

- Switching costs, Repeat purchase, Involvement, Perceived value, Brand relevance, Brand affect, Brand performance and Culture had Cronbach Alpha values higher than 0.7 ($\alpha > 0.7$) and can therefore be considered as "Acceptable" in terms of reliability.

- Relationship proneness was the only influence for Gelacid with a Cronbach Alpha value higher than 0.6 ($\alpha > 0.6$) but lower than 0.7 and can therefore be considered as “Questionable” in terms of reliability but still acceptable.

3.5 IMPORTANCE OF RESEARCH VARIABLES

The questionnaire is designed on a 7-point Likert scale to measure the twelve influences as proposed by Moolla (2010:150). The Likert scale ranged from strongly agree to strongly disagree as shown below from the calculated index:

- Strongly Agree (1)
- Agree (2)
- Slightly Agree (3)
- Undecided (4)
- Slightly Disagree (5)
- Disagree (6)
- Strongly Disagree (7)

The Likert scale mean values are displayed in a percentage value to interpret the results. The percentages are interpreted as follows (Bisschoff & Lotriet, 2009:270):

Table 3.28: Interpretation of mean percentage values

PERCENTAGE	INTERPRETATION
<60%	Lower importance; Dissatisfaction; Immediate action required
60% - 75%	Important; Satisfaction; Develop to become excellent
>75%	Very important; very satisfied/excellent Maintain to stay on top

3.5.1 Customer satisfaction (CUS)

Table 3.29 summarises the mean scores per question of the influence of customer satisfaction and represents the importance of each question to determine brand loyalty in the pharmaceutical industry to establish whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.29: Mean scores of customer satisfaction

Mean scores of customer satisfaction			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
CUS01	I am very satisfied with the listed OTC brand I purchase	73.26%	27.66%
CUS02	Distinctive product attributes in OTC keep me brand loyal	69.81%	28.14%
CUS03	My loyalty towards a particular OTC brand increases when I am satisfied with that brand	72.77%	28.15%
CUS04	I do not repeat a purchase if I am dissatisfied with a particular OTC brand	***	30.48%
CUS05	I attain pleasure from the OTC brands I am loyal towards	69.53%	27.23%
MEAN AVERAGE FOR CUSTOMER SATISFACTION		71.53%	28.39%

- **Gaviscon:** Questions CUS02 and CUS05 are above the satisfactory level of 60%, which indicates that these questions are important and have to be developed to become excellent. This also indicates that these questions measure brand loyalty satisfactorily. Questions CUS01 and CUS03 are above 70%, which indicates that these questions are satisfactory and important to measure brand loyalty. They can also be developed to a level of excellence. The mean average for customer satisfaction is 71.53%. Question CUS04 has been deleted due to a low factor loading of 0.358 which is below the minimum requirement of 0.400.
- **Gelacid:** Questions CUS01 to CUS05 are all below 60% and range from 27.23% to 30.48%. Therefore it is unsatisfactory. Immediate attention is required to improve brand loyalty. The mean average for customer satisfaction is 28.39%.

3.5.2 Switching costs (SCR)

The mean scores per question of the influence switching costs is summarised below in Table 3.30 and represent the importance of each question to determine whether patients are brand loyal and prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.30: Mean scores of switching costs

Mean scores of switching costs			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
SCR01	I do not switch OTC brands because of the high cost implications	62.28%	31.10%
SCR02	I do not switch OTC brands because of the effort required to reach a level of comfort	63.27%	28.85%
SCR03	I avoid switching OTC brands due to the risks involved	61.65%	30.54%
SCR04	I switch OTC brands according to the prevailing economic conditions	53.50%	30.41%
SCR05	I prefer not to switch OTC brands as I stand to lose out on the benefits from loyalty programmes	44.26%	30.54%
MEAN AVERAGE FOR SWITCHING COSTS		57.04%	31.09%

- **Gaviscon:** Questions SCR01, SCR02 and SCR03 are above the satisfactory level of 60%. Therefore they are important and need to be developed to a level of excellence. Questions SCR04 and SCR05 are below 60% and therefore indicate lower importance and dissatisfaction. Immediate action is required to improve these two questions to a satisfactory level. The mean average for switching costs is 57.04%.

- **Gelacid:** Questions SCR01, SCR02, SCR03, SCR04 and SCR05 are all below 60% and therefore unsatisfactory. The mean values range from 28.85% to 31.10% which indicates that immediate action is required to improve these questions. The mean average for switching costs is 31.09%.

3.5.3 Brand trust (BTS)

Table 3.31 summarises the mean scores per question of the influence brand trust and represents the importance of each question to determine brand loyalty in the pharmaceutical industry to establish whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.31: Mean scores of brand trust

Mean scores of brand trust			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
BTS01	I trust the OTC brands I am loyal towards	70.86%	27.91%
BTS02	I have confidence in the OTC brands that I am loyal to	70.72%	27.92%
BTS03	The OTC brands I purchase has consistently high quality	71.29%	26.24%
BTS04	The reputation of an OTC brand is a key factor in me maintaining brand loyalty	69.38%	28.22%
MEAN AVERAGE FOR BRAND TRUST		70.55%	27.30%

- **Gaviscon:** Questions BTS01, BTS02, BTS03 and BTS04 are all above the satisfactory level of 60%. BTS01, BTS02 and BTS03 are all above 70%. This is satisfactory and they can further be developed to become excellent. The average mean for brand trust is 70.55%.
- **Gelacid:** Questions BTS01, BTS02, BTS03 and BTS04 are all below the minimum level of 60%. The mean values range from 26.24% to 28.22% which is a cause for concern. Managerial efforts are required immediately to improve this unsatisfactory result. The average mean for brand trust is 27.30%.

3.5.4 Repeat purchase (RPR)

The mean scores per question of the influence repeat purchase is summarised in Table 3.32 below. It represents the importance of each question to determine brand loyalty and whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.32: Mean scores of repeat purchase

Mean scores of repeat purchase			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
RPR01	I prefer to maintain a long term relationship with an OTC brand	71.01%	27.02%
RPR02	I maintain a relationship with an OTC brand in keeping with my personality	62.02%	28.36%
RPR03	I maintain a relationship with an OTC brand that focuses and communicates with me	63.86%	29.63%
RPR04	I have a passionate and emotional relationship with the OTC brands I am loyal to	59.99%	27.93%
MEAN AVERAGE FOR REPEAT PURCHASE		64.35%	28.33%

- **Gaviscon:** Questions RPR01, RPR02 and RPR03 are all important and above the minimum satisfactory level of 60%. The mean values for these questions range from 62.02% to 71.01% and needs to be developed further to become excellent. Question RPR04 is below 60% with 59.99% and is of lower importance and at a dissatisfactory level. Immediate action is required to improve loyalty for question RPR04. The mean average for repeat purchase is 64.35%.

- **Gelacid:** Questions RPR01, RPR02, RPR03 and RPR04 are all below the satisfactory level of 60%, ranging from 27.02% to 29.63%. This means that all the questions need to be improved and further developed. Special managerial efforts are thus required to improve loyalty for all these questions. The average mean for repeat purchase is 28.33%.

3.5.5 Involvement (INV)

Table 3.33 summarises the mean scores per question of the influence involvement and represents the importance of each question to determine brand loyalty in the pharmaceutical industry to establish whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.33: Mean scores of involvement

Mean scores of involvement			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
INV01	Loyalty towards an OTC brand increases the more I am involved with it	66.90%	29.49%
INV02	Involvement with an OTC brand intensifies my arousal and interest towards that brand	63.48%	28.50%
INV03	I consider other OTC brand when my involvement with my OTC brand diminishes	61.22%	31.88%
INV04	My choice of an OTC brand is influenced by the involvement others have with their OTC brand	51.92%	28.50%
MEAN AVERAGE FOR INVOLVEMENT		60.84%	29.59%

- **Gaviscon:** Questions INV01, INV02 and INV03 all have mean values above 60%, ranging from 61.22% to 66.90% which indicates that they need to be developed further to a level of excellence; however, they are satisfactory. Question INV04 is below the required mean value of 60% with 51.92% and therefore it is dissatisfactory which means it requires immediate action and attention. The mean average for involvement is 60.84%.

- **Gelacid:** All questions ranging from INV01 to INV04 are unsatisfactory as they fall below the required mean average of 60%. Special managerial efforts are required to improve loyalty for questions INV01 (29.49%), INV02 (28.50%), INV03 (31.88%) and INV04 (28.50%). The mean average for involvement is 29.59%.

3.5.6 Perceived value (PVL)

The mean scores per question of the influence perceived value is summarised below in Table 3.34 and represent the importance of each question to determine whether patients are brand loyal and prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.34: Mean scores of perceived value

Mean scores of perceived value			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
PVL01	My OTC brand is based on product quality and expected performance	***	26.39%
PVL02	I have an emotional attachment with the OTC brands I am loyal towards	60.45%	27.73%
PVL03	Price worthiness is a key influence in my loyalty towards OTC brands	65.42%	30.83%
PVL04	The OTC brands that I am loyal to enhances my social self concept	55.38%	29.20%
MEAN AVERAGE FOR PERCEIVED VALUE		63.67%	28.58%

- **Gaviscon:** Questions PVL02 and PVL03 are above the satisfactory level of 60% with 60.45% and 65.42% respectively. This indicates that these questions are satisfactory and can be developed further to a level of excellence. Question PVL04 has a mean average below 60% which indicates that immediate managerial attention is required as the mean average of 55.38% is unsatisfactory. Question PVL01 has been eliminated as it had a factor loading below the minimum required level of 0.400 with a factor loading of 0.361. The mean average for perceived value is 63.67%.

- **Gelacid:** Questions PVL01, PVL02, PVL03 and PVL04 are all far below 60%, ranging from 26.39% to 30.83% which means it is unsatisfactory and requires immediate managerial attention. The mean average for perceived value is 28.58%.

3.5.7 Commitment (COM)

Table 3.35 summarises the mean scores per question of the influence commitment and represents the importance of each question to determine brand loyalty in the pharmaceutical industry to establish whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.35: Mean scores of commitment

Mean scores of commitment			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
COM01	I have pledged my loyalty to particular OTC brands	57.64%	28.92%
COM02	I do not purchase other OTC brands if my OTC brand is unavailable	50.39%	29.92%
COM03	I identify with the OTC brands that I consume and feel as part of the brand community	63.62%	28.29%
COM04	The more I become committed to an OTC brand, the more loyal I become	65.24%	28.64%
COM05	I remain committed to OTC brands even through price increases and declining popularity	58.44%	28.82%
MEAN AVERAGE FOR COMMITMENT		59.06%	28.94%

- **Gaviscon:** Questions COM03 and COM04 are satisfactory as they are above the required average of 60% with 63.62% and 65.24% respectively. Questions COM01, COM02 and COM05 are below the satisfactory level of 60% and these low means indicate that these questions need to be improved and further developed. The mean average for commitment is 59.06%.
- **Gelacid:** Questions COM01, COM02, COM03, COM04 and COM05 all fall below the satisfactory level of 60%, ranging from 28.29% to 28.92%. These low means are an indication that all these questions need to be improved and immediate attention is required. The mean average for commitment is 28.94%.

3.5.8 Relationship proneness (RPS)

The mean scores per question of the influence relationship proneness is summarised below in Table 3.36 and represent the importance of each question to determine whether patients are brand loyal and prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.36: Mean scores of relationship proneness

Mean scores of relationship proneness			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
RPS01	My loyalty towards OTC brands is purely habitual	49.89%	28.78%
RPS02	I do not necessarily purchase the same OTC brands all the time	54.33%	34.48%
RPS03	I always purchase new OTC brands as soon as they are available	49.47%	30.82%
RPS04	I establish an OTC brand purchasing pattern and seldom deviate from it	56.37%	29.84%
RPS05	Loyalty programmes are the reason I repeat OTC brand purchases	43.84%	27.73%
MEAN AVERAGE FOR RELATIONSHIP PRONENESS		50.78%	30.33%

- **Gaviscon:** Questions RPS01, RPS03 and RPS05 all have mean averages below 50% while questions RPS02 and RPS04 have mean averages below 60%. Thus all of the questions from RPS01 to RPS05 are below the satisfactory level of 60% and require immediate action to improve loyalty for these questions. The mean average for relationship proneness is 50.78%.
- **Gelacid:** Questions RPS01 (28.78%), RPS02 (34.48%), RPS03 (30.82%), RPS04 (29.84%) and RPS05 (27.73%) all have mean averages far below the satisfactory level of 60% which is unsatisfactory. This is a cause for concern and requires special managerial action to improve loyalty for these questions. The mean average for relationship proneness is 30.33%.

3.5.9 Brand affect (BAF)

Table 3.37 summarises the mean scores per question of the influence brand affect and represents the importance of each question to determine brand loyalty in the pharmaceutical industry to establish whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.37: Mean scores of brand affect

Mean scores of brand affect			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
BAF01	I attain a positive emotional response through the usage of an OTC brand	58.20%	28.50%
BAF02	The OTC brand I am loyal towards makes a difference in my life	63.97%	27.23%
BAF03	I am distressed when I am unable to purchase/use a particular OTC brand	54.95%	28.06%
MEAN AVERAGE FOR BRAND AFFECT		59.08%	27.97%

- **Gaviscon:** Question BAF02 falls above the satisfactory level of 60% which means that it should be developed further to a level of excellence. Questions BAF01 and BAF03 fall below the satisfactory level with 58.20% and 54.95% respectively. The mean average for brand affect is 59.08%.
- **Gelacid:** All questions (BAF01, BAF02, BAF03) fall below the satisfactory level of 60% which indicates that immediate action is required to improve loyalty for these questions. The mean average for these questions range from 27.23% to 28.50% with a mean average for brand affect of 27.97%.

3.5.10 Brand relevance (BRV)

The mean scores per question of the influence brand relevance is summarised below in Table 3.38 and represent the importance of each question to determine whether patients are brand loyal and prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.38: Mean scores of brand relevance

Mean scores of brand relevance			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
BRV01	The OTC brands that I am loyal towards stand for issues that actually matter	59.05%	29.07%
BRV02	The OTC brands that I am loyal towards have freshness about them and portray positive significance	62.23%	28.71%
BRV03	I know that an OTC brand is relevant through the brand messages communicated	60.75%	28.22%
BRV04	The OTC brands that I am loyal towards are constantly updating and improving so as to stay relevant	69.32%	24.98%
MEAN AVERAGE FOR BRAND RELEVANCE		62.81%	27.76%

- **Gaviscon:** Questions BRV02, BRV03 and BRV04 are all above the satisfactory level of 60%. Therefore these questions are satisfactory and should be developed to become excellent. Question BRV01 is below 60% with 59.05% which is unsatisfactory and therefore action is required to improve loyalty. The mean average for brand relevance is 62.81%.
- **Gelacid:** Questions BRV01 (29.07%), BRV02 (28.71%), BRV03 (28.22%) and BRV04 (24.98%) are all below the 60% margin and are therefore unsatisfactory. Immediate managerial action is required to improve loyalty for these questions. The mean average of brand relevance is 27.76%.

3.5.11 Brand performance (BPF)

Table 3.39 summarises the mean scores per question of the influence brand performance and represents the importance of each question to determine brand loyalty in the pharmaceutical industry to establish whether patients prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.39: Mean scores of brand performance

Mean scores of brand performance			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN %**
BPF01	I evaluate an OTC brand based on perceived performance	69.25%	26.60%
BPF02	I will switch OTC brand loyalty should a better performing OTC brand be available	64.11%	31.25%
BPF03	I am loyal only towards the top performing OTC brand	57.78%	29.92%
MEAN AVERAGE FOR BRAND PERFORMANCE		63.68%	29.24%

- **Gaviscon:** Questions BPF01 and BPF02 are above the satisfactory level of 60% with 69.25% and 64.11% respectively. This indicates that these questions are satisfactory and that they should be developed further to reach a level of excellence. Question BPF03 is below the satisfactory level of 60% with 57.78% which requires managerial action to improve loyalty. The mean average for brand performance is 63.68%.
- **Gelacid:** All questions (BPF01, BPF02 and BPF03) are far below the satisfactory level of 60% and therefore these questions need to be improved and further developed with special managerial efforts to improve loyalty. The mean average for brand performance is 29.24%.

3.5.12 Culture (CUL)

The mean scores per question of the influence culture is summarised below in Table 3.40 and represent the importance of each question to determine whether patients are brand loyal and prefer the original brand Gaviscon or the generic, Gelacid.

Table 3.40 Mean scores of culture

Mean scores of culture			
CODE	**QUESTION**	**GAVISCON MEAN %**	**GELACID MEAN%**
CUL01	My choice of OTC brands are in keeping with the choice made by other members in my race group	44.13%	29.42%
CUL02	My loyalty towards an OTC brand is based on the choice of OTC brand used by my family	56.93%	31.29%
CUL03	Religion plays a role in my choice and loyalty of OTC brands	33.80%	27.58%
CUL04	Family used OTC brands indirectly assure brand security and trust	61.65%	30.68%
MEAN AVERAGE FOR CULTURE		49.16%	29.80%

- **Gaviscon:** Question CUL04 is above the satisfactory level of 60% with 61.65%. This indicates that it is satisfactory and needs to be developed to become excellent. Questions CUL01, CUL02 and CUL03 are all below 60%, ranging from 33.80% to 56.93%. This indicates that these questions are unsatisfactory and that immediate managerial action is required to improve loyalty. The mean average for culture is 49.16%.
- **Gelacid:** Questions CUL01, CUL02, CUL03 and CUL04 are all far below the satisfactory level of 60% and these low means indicate that all these questions need to be improved and that further development is required. The mean average for culture is 29.80%.

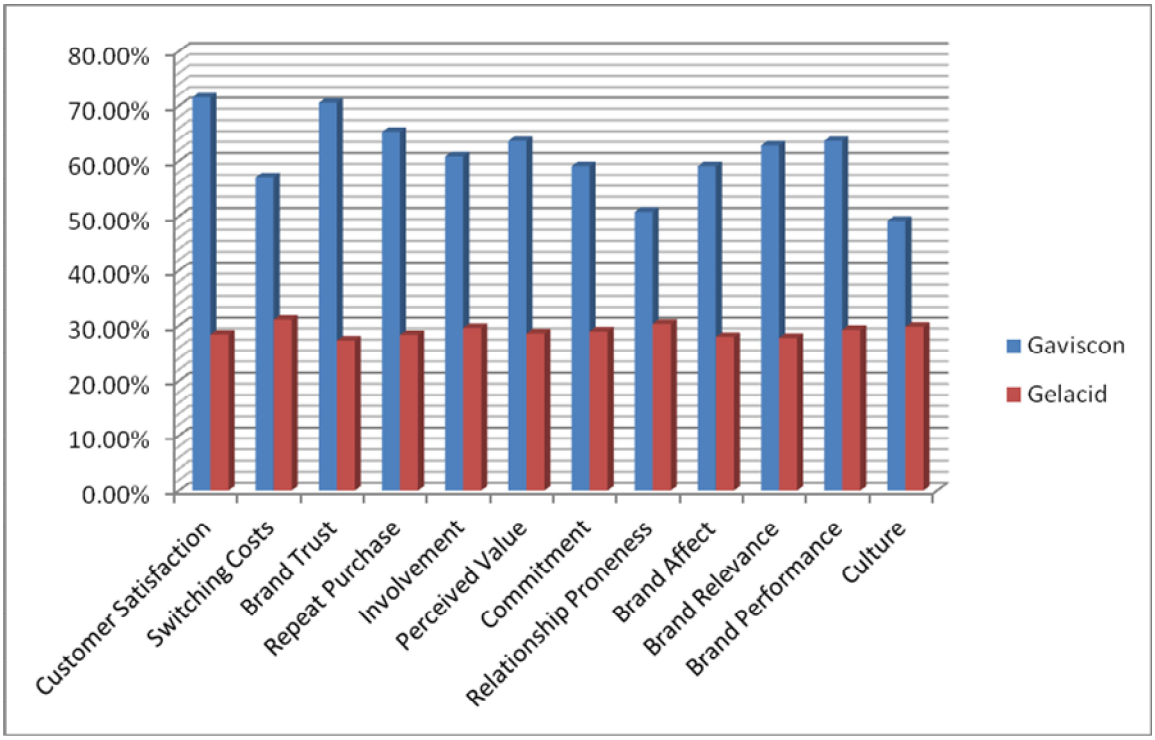
3.6 SUMMARY OF MEAN VALUES

The mean values of the brand loyalty influences are summarised for Gaviscon and Gelacid in Table 3.41 below and in Figure 3.7 on the next page.

Table 3.41: Summary of mean values of brand loyalty influences

DESCRIPTION	PRODUCT	INFLUENCE %
Customer Satisfaction	Gaviscon	71.53%
	Gelacid	28.39%
Switching Costs	Gaviscon	57.04%
	Gelacid	31.09%
Brand Trust	Gaviscon	70.55%
	Gelacid	27.30%
Repeat Purchase	Gaviscon	65.35%
	Gelacid	28.33%
Involvement	Gaviscon	60.84%
	Gelacid	29.59%
Perceived Value	Gaviscon	63.67%
	Gelacid	28.58%
Commitment	Gaviscon	59.06%
	Gelacid	28.94%
Relationship Proneness	Gaviscon	50.78%
	Gelacid	30.33%
Brand Affect	Gaviscon	59.08%
	Gelacid	27.97%
Brand Relevance	Gaviscon	62.81%
	Gelacid	27.76%
Brand Performance	Gaviscon	63.68%
	Gelacid	29.24%
Culture	Gaviscon	49.16%
	Gelacid	29.80%

Figure 3.7: Summary of brand loyalty influences of Gaviscon and Gelacid



The summary of the influences of brand loyalty indicates the following:

Gaviscon:

- The influences Customer satisfaction, Brand trust, Repeat purchase, Involvement, Perceived value, Brand relevance and Brand performance all have mean values above the satisfactory level of 60% and can therefore be seen as important influences to measure brand loyalty in the pharmaceutical industry for Gaviscon.

- The influences Switching costs, Commitment, Relationship proneness, Brand affect and Culture all have mean values below the satisfactory level of 60% and therefore these questions need to be improved and developed further to improve brand loyalty for Gaviscon.

Gelacid:

- The influences Customer satisfaction, Switching costs, Brand trust, Repeat purchase, Involvement, Perceived value, Commitment, Relationship proneness, Brand affect, Brand relevance, Brand performance and Culture all

have mean values below 60%. Therefore all require special managerial attention as these mean values are far below the satisfactory level of 60%, which indicates a low level of brand loyalty.

Implications:

- The total mean average of brand loyalty for Gaviscon is 61.13% which is above the satisfactory level of 60%. This indicates that patients are brand loyal to Gaviscon and this should be further developed to reach an even higher level of brand loyalty.
- The total mean average of brand loyalty for Gelacid is 28.94% which is far below the satisfactory level of 60%. This indicates that patients are not loyal to the generic, Gelacid and managerial efforts are required to improve the brand loyalty of Gelacid.

3.6 EFFECT SIZES

The effect size is a statistical measure that calculates the practical significance between two groups of variables (Ellis & Steyn, 2003:51; Bisschoff & Kade, 2010:7). The effect size values have to be greater than 0 and a practical significance is found with a *d-value* ≥ 0.8. The effect size explains a large enough effect which can be significant in practice and explains the difference in means. The effect size is also independent of the samples size (Ellis & Steyn, 2003:51). The classification of effect sizes is shown in Table 3.42 below (Ellis & Steyn, 2003:53).

Table 3.42: Effect size classification

Effect size	Interpretation
$0.2 \leq d < 0.5$	Small effect
$0.5 \leq d < 0.8$	Medium effect
$d \geq 0.8$	Large effect, practically significant

The effect sizes of the brand loyalty influences are displayed below in Table 3.43

Table 3.43: Effect sizes of brand loyalty influences

DESCRIPTION	PRODUCT	EFFECT SIZES
Customer Satisfaction	Gaviscon	2.39
	Gelacid	
Switching Costs	Gaviscon	1.55
	Gelacid	
Brand Trust	Gaviscon	2.39
	Gelacid	
Repeat Purchase	Gaviscon	2.20
	Gelacid	
Involvement	Gaviscon	2.05
	Gelacid	
Perceived Value	Gaviscon	2.15
	Gelacid	
Commitment	Gaviscon	1.79
	Gelacid	
Relationship Proneness	Gaviscon	1.17
	Gelacid	
Brand Affect	Gaviscon	1.81
	Gelacid	
Brand Relevance	Gaviscon	2.32
	Gelacid	
Brand Performance	Gaviscon	1.95
	Gelacid	
Culture	Gaviscon	0.91
	Gelacid	

When comparing the results displayed in Table 3.43 to the classification in Table 3.42, the following assumptions can be made:

- All of the effect sizes of the twelve influences of brand loyalty between Gaviscon and Gelacid are larger than 0.8 ($d \geq 0.8$) which means that all twelve influences are practically significant.
- The influences displaying the largest effect sizes are Customer satisfaction (2.39); Brand trust (2.39); Repeat purchase (2.20); Involvement (2.05); Perceived value (2.15) and Brand relevance (2.32).
- The influences displaying the smallest effect sizes are Switching costs (1.55); Commitment (1.79); Relationship proneness (1.17); Brand affect (1.81); Brand performance (1.95) and Culture (0.91). Although these values are lower than the other influences of brand loyalty, they are still practically significant.
- From the above data it is clear that consumers are loyal to the brand Gaviscon and therefore prefer brands to generics as the effect sizes are all larger than the minimum requirement for practical significance ($d \geq 0.8$).

3.7 CONCLUSION

This chapter included the descriptive and informative section regarding influences that affect brand loyalty in the Pharmaceutical industry which is based on the conceptual framework developed by Moolla (Moolla, 2010:197). The results were obtained by means of a questionnaire adapted from Moolla (Appendix A).

This study reported on the following:

- Research methodology which included the demographic analysis, the sampling procedure, questionnaire development, data collection and data analysis.
- Statistical analysis which included factor analysis, Cronbach Alpha coefficients, Kaiser-Meyer-Olkin measures of sampling adequacy and Bartlett's test of sphericity.

- Empirical results through quantitative analysis which included the validity of the research instrument used, calculation of the reliability coefficients which reported on the significance of the selected criteria and the importance of the research variables.

- Discussion of the results.

This chapter included the results of the empirical study regarding the following:

- Whether Moolla's brand loyalty conceptual framework is relevant to measure brand loyalty in the pharmaceutical industry,

- Whether patients prefer the original pharmaceutical brand, Gaviscon or the generic brand, Gelacid.

- Identified the factors influencing brand loyalty in the consumer's choice of two specific pharmaceutical brands.

Chapter four concludes this study with a focus on conclusions and recommendations. The brand loyalty framework for the pharmaceutical industry will also be presented and areas for future research will be identified.

CHAPTER 4

CONCLUSIONS AND RECOMMENDATIONS

4.1 INTRODUCTION

This chapter concludes this study of brand loyalty in the pharmaceutical industry of South Africa. The following will be discussed:

- Conclusions and recommendations will be made based on the results obtained from Chapter 3 and the literature review conducted in Chapter 2. The conclusions will include the discussion of the validity and the reliability of the data used to conduct this study.
- The brand loyalty influences, which are based on Moolla's brand loyalty framework, will be conceptualised for the pharmaceutical industry along with the variances of the different influences.
- To conclude whether patients are brand loyal and therefore prefer original brands or are not brand loyal and therefore prefer generic pharmaceutical brands.
- Areas for future research will be identified.
- Finally this chapter will conclude with an overview of the research done in this study to determine brand loyalty in the pharmaceutical industry of South Africa.

4.2 CONCLUSIONS

The conclusions for this study will be divided into three sections, where the first section's conclusions are based on the statistical measures used in this study and the second section's conclusions are based on the results for pharmaceutical brand loyalty. The third section will conclude with regards to areas for future research.

4.2.1 Conclusions regarding statistical procedures

Conclusion 1

The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy yielded values which ranged from 0.636 to 0.802 for Gaviscon and values ranging from 0.655 to 0.842 for Gelacid. Only three of the variables measured for Gaviscon had KMO values below 0.7 but above 0.6 and only two of the variables measured for Gelacid had KMO values below 0.7 but above 0.6. According to Bisschoff and Kade (2010:8), a KMO value of at least 0.6 should be present before factor analysis can be considered. Therefore the Kaiser-Meyer-Olkin measure of sampling adequacy was suitable to determine whether factor analysis could be used to analyse the data in this study. The average KMO measure for Gaviscon yielded 0.721 for the twelve influences measured and 0.742 for Gelacid.

Conclusion 2

Bartlett's test of sphericity was used to determine the sampling adequacy and determined the strength of the relationship between the variables. The significance level for the Barlett test of sphericity was 0.000 (Bisschoff & Kade, 2010:8). The Barlett test of sphericity indicated that the data of Gaviscon and Gelacid was suitable for factor analysis.

Conclusion 3

Factor analysis was used to analyse the data and it was an appropriate statistical tool to use in this study. The factors that were extracted due to a factor loading below the minimum value of 0.400 explained the variance in the 12 influences satisfactorily. A total of 11 out of the 12 influences for Gaviscon yielded single values where as all 12 influences for Gelacid, yielded single values. The factor analysis identified that within one influence of Gaviscon, Involvement, two sub-influences existed.

Conclusion 4

The Cronbach Alpha coefficient proved that the data for this study was reliable and measured the internal consistency of the data (Field, 2005:658; Bisschoff & Kade, 2010:6). Most factors proved satisfactory reliability coefficients as they were above

the 0.700 level of reliability (George & Mallery, 2003:231). Some influences' reliability can be questioned as these influences had a reliability coefficient higher than 0.600 but lower than 0.700. However a reliability coefficient of 0.600 was significant (Cortina (1993) in Field, 2005:666). Therefore it can be concluded that all factors with reliability coefficients above 0.700 are reliable to measure brand loyalty in the pharmaceutical industry and those above 0.600 are significant.

4.2.2 Conclusions based on the results for pharmaceutical brand loyalty

Conclusion 1

The statistical analysis confirmed that all the brand loyalty influences for both Gaviscon and Gelacid are valid to measure pharmaceutical brand loyalty. Questions that have been eliminated are CUS04 and PVL01 for Gaviscon, all other questions proved to be valid for both Gaviscon and Gelacid. It can be concluded that these two influences are measured slightly different in the pharmaceutical industry compared to the fast moving consumer goods (FMCG) industry.

Conclusion 2

This study has also identified that one of the brand loyalty influences of Gaviscon, Involvement, has sub-influences within itself. The influence, Involvement can therefore be seen as dualistic, where as all other influences are represented by a single influence.

Conclusion 3

It can be concluded that the influences Customer satisfaction, Brand trust, Repeat purchase, Involvement, Perceived value, Brand relevance and Brand performance are the most important influences of brand loyalty for Gaviscon as all of these had mean values above 60% (Bisschoff & Lotriet, 2009:270). The influences Switching costs, Commitment, Relationship proneness, Brand affect and Culture were all below the satisfactory level of 60% and therefore needs to be improved and developed further to improve brand loyalty for Gaviscon. All of the influences for Gaviscon had means greater than 49.16% with Customer satisfaction as the most important

influence with a mean value of 71.53%. Culture was identified as the least important influence of pharmaceutical brand loyalty with a mean value of 49.16%. With regards to the mean values for Gelacid, all of the means reported relatively low compared to Gaviscon with values below 60% and therefore it indicated a low level of brand loyalty towards Gelacid. All of these influences require special managerial attention to improve and develop brand loyalty amongst consumers. The most important influence for Gelacid was switching costs with 31.09% and the least important influence was Brand trust with 27.30%, however both of the mean values for these influences are unsatisfactory (Bisschoff & Lotriet, 2009:270). The average mean value of all the brand loyalty influences for Gaviscon was 61.13% which is above the satisfactory level of 60%, while the average mean value for Gelacid was 28.94% which is unsatisfactory. This indicates that patients are brand loyal to Gaviscon and not brand loyal to the generic, Gelacid.

Conclusion 4

It can be concluded that the statistical measure of effect sizes calculated the practical significance between Gaviscon and Gelacid. The effect sizes of the twelve influences of brand loyalty are all larger than 0.8 ($d \geq 0.8$) which means that all twelve influences are practically significant. It can also be concluded that patients are loyal to Gaviscon and therefore brand loyal.

Conclusion 5

It can be concluded that the demographic profile of the respondents did not represent the total population of South Africa. The gender profile included an almost equal number of both genders, where the male respondents were 45% and the female respondents were 55%. The equal distribution of genders amongst respondents displayed a good representation of the population of South Africa. The age of the respondents were well distributed with the majority aged between 31 to 40 years. The income segment per annum indicated that the majority of respondents earned between R500 000 to R1000 000 per annum. With regards to the industry of employment a wide range of different industries were included, however, most participants were employed in the Healthcare industry. The geographic distribution of participants included most of the provinces in South Africa; however, 80% of the

respondents represented the Gauteng province. The reason for this uneven distribution is that most questionnaires were given to Gauteng residents. Therefore this study does not represent all the provinces in South Africa equally. With regards to the ethnicity of the participants most cultures present in South Africa were represented in this study, the majority of participants were white followed by black respondents and therefore the ethnicity of the participants is not a true reflection of the South African population. It can be concluded that the demographic profile did not represent the population of South Africa satisfactorily in some of the components of the demographic profile.

4.2.3 Conclusions with regards to future research

Conclusion 1

This study is not representative of the whole population of South Africa, even though a favourable response of 203 respondents has been received. It can be concluded that this study adds value to the research based on pharmaceutical brand loyalty and that future research could substantiate the findings in different research populations and also in other industries.

4.3 RECOMMENDATIONS

The recommendations of this study will also be divided into three sections, where the first section's recommendations are based on the statistical measures used in this study and the second section's recommendations are based on the results for pharmaceutical brand loyalty. The third section will provide recommendations with regards to future research.

4.3.1 Recommendations regarding statistical procedures

Recommendation 1

With regards to Conclusion 1, Conclusion 2, Conclusion 3 and Conclusion 4 it is recommended that the brand loyalty questionnaire, developed by Moolla (2010:262)

to measure brand loyalty of fast moving consumer goods (FMCG) can be used to measure brand loyalty in the pharmaceutical industry. The statistics used in this study provided reliable data that could be analysed and interpreted competently. Factor analysis is recommended to determine the validity of the research questionnaire accurately and determines the interrelationships among variables. The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity are recommended to determine whether factor analysis is suitable when interpreting data. It is recommended that the Cronbach Alpha coefficient should be used to measure the reliability of the data when conducting a study.

4.3.2 Recommendations based on the results for pharmaceutical brand loyalty

Recommendation 1

When measuring pharmaceutical brand loyalty it is recommended that the questionnaire adapted from the FMCG questionnaire should be used as determined by this study.

Recommendation 2

With regards to the results of this study it is recommended that the results should keep in mind the dualistic nature of some of the influences. These influences represent two sub-influences and therefore each sub-influence's importance and influence on pharmaceutical brand loyalty should be determined. Managers should, therefore, take note and address the more important sub-influence first as this would yield higher returns on managerial inputs.

Recommendation 3

With regards to the importance of the brand loyalty influences, it is recommended that management should develop the more important brand loyalty influences as identified through this study.

Recommendation 4

With regards to the effect sizes determined by this study, it is recommended that companies should keep in mind that consumers are brand loyal with regards to the over-the-counter pharmaceutical industry. Therefore companies should manage and position their products in the pharmaceutical industry as a brand and not simply as another generic.

Recommendation 5

It is recommended that a larger study representing the South African population more accurately should be conducted. Provinces and ethnicity groups in South Africa that were excluded by this study should be included to measure pharmaceutical brand loyalty. Therefore this study is not representative of the entire South African population.

4.3.3 Recommendations with regards to future research

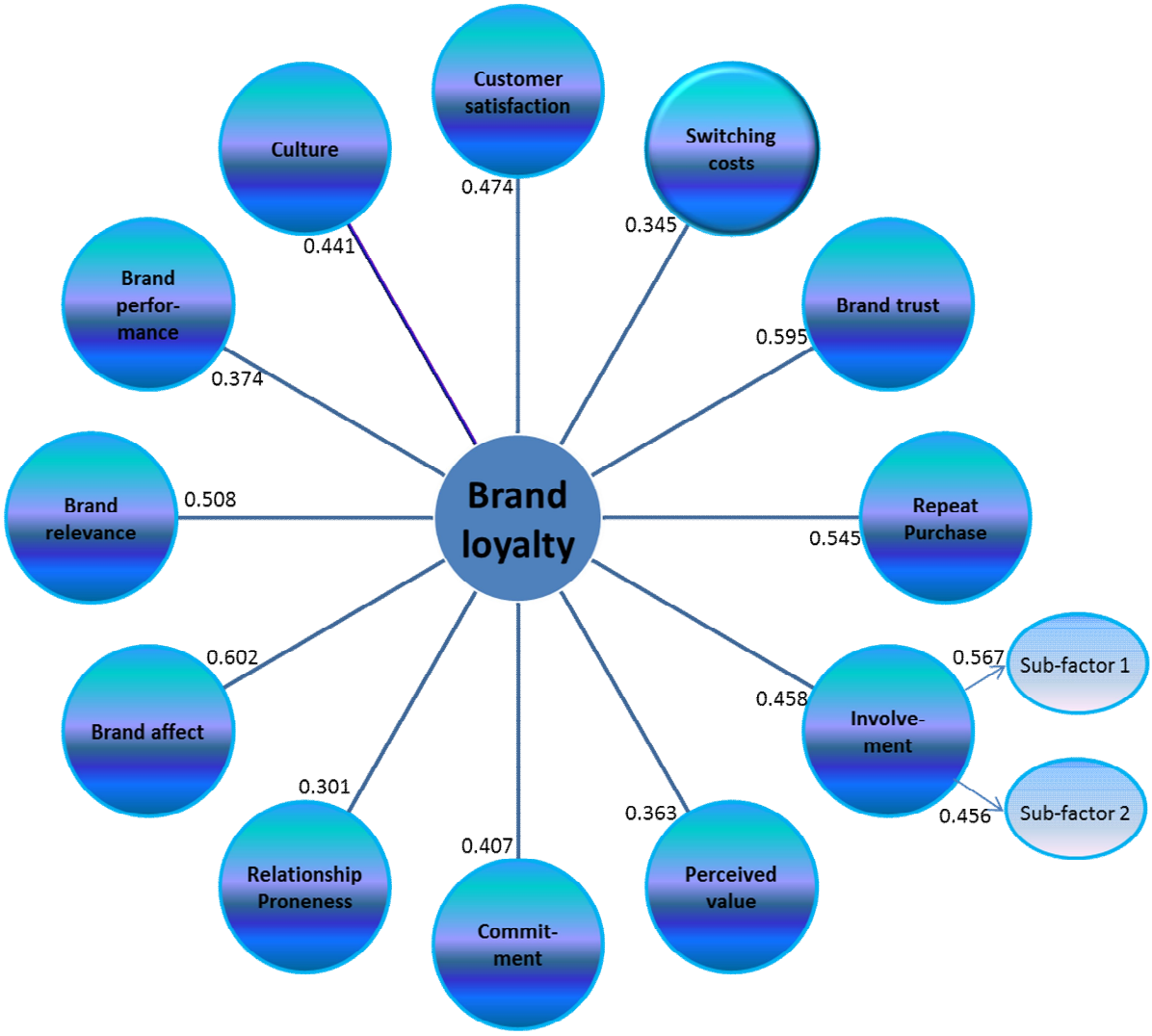
Recommendation 1

With regards to future research, it is recommended that this study should be performed using a larger sample of the population to measure pharmaceutical brand loyalty. Secondly, further studies should also be conducted to get a global perspective, since the proposed model was only tested in the South African culture. Thirdly, other factors influencing brand loyalty like the role of the prescribers, pharmaceutical sales representatives and pharmacists should be included in future studies.

4.4 BRAND LOYALTY FRAMEWORK OF THE PHARMACEUTICAL INDUSTRY

The framework to measure brand loyalty in the pharmaceutical industry is displayed below in Figure 4.1 as adapted from Moolla (2010:197).

Figure 4.1: A conceptual pharmaceutical brand loyalty framework



Adapted: Moolla (2010:197)

Figure 4.1 on the previous page displays the total variance per influence of the pharmaceutical brand loyalty framework. It also shows that one influence, Involvement is represented by two sub-influences within the Involvement influence.

4.5 AREAS FOR FUTURE RESEARCH

Regarding areas for future research, the following has been identified:

- Further research to determine brand loyalty within the pharmaceutical industry of South Africa and internationally should be conducted on a larger scale to confirm or refine the results of this study.
- Future research is recommended with regards to the pharmaceutical industry to establish whether patients prefer original or generic brands.
- Other factors influencing pharmaceutical brand loyalty like the role of the prescribers, pharmaceutical sales representatives and pharmacists should be included in future research.
- This study was only applicable to over-the-counter medication and for future research it is recommended to determine whether pharmaceutical brand loyalty exists with regards to prescription medication.
- The applicability of Moolla's brand loyalty model to other industries should be determined.
- A comparative study between Moolla's original brand loyalty model for the FMCG industry (Moolla, 2010:197) and this study for the pharmaceutical industry should be conducted. The aim of the comparative study is to determine which questions measuring the brand loyalty influences are more significant in measuring brand loyalty and which questions are less significant.

4.6 CONCLUSION

The main aim of this study was to measure brand loyalty in the over-the-counter pharmaceutical industry of South Africa and to establish whether patients are brand loyal to original pharmaceutical brands and the influence of generics on pharmaceutical brand loyalty. The measurement of brand loyalty in the pharmaceutical industry is based on Moolla's brand loyalty framework for the FMCG industry. This study also aimed to determine whether Moolla's FMCG brand loyalty framework is applicable to the pharmaceutical industry. In order to achieve the primary objectives, several secondary objectives were set and reached throughout the four chapters of this study.

Chapter one identified the need to measure brand loyalty in the pharmaceutical industry and elaborated on the purpose of this study. It also identified the primary and secondary objectives of this study and explained the research methodology. Chapter one also provided the structure of this study and the areas of research conducted in each chapter.

Chapter two reflected on the South African pharmaceutical industry which included a review of the over-the-counter medicine industry and the generic pharmaceutical industry. Chapter two also reflected on the literature of brand loyalty which incorporated the benefits of brand loyalty as well as Moolla's brand loyalty framework.

Chapter three presented the research methodology which included the analysis and the empirical results of this study. It elaborated on the methods used to conduct this study which included the sampling procedure, data collection, data analysis and statistical techniques used. The empirical results focused on the demographic profile of the respondents, the validity of the questionnaire, the reliability of the results obtained as well as the importance of the research variables.

Chapter four, the final chapter of this study presented the adapted framework to measure pharmaceutical brand loyalty. It also provided conclusions and recommendations with regards to the statistical procedures used and the results obtained within this study. To conclude this chapter, areas for future research were identified.

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APPENDIX A

Research questionnaire to determine brand loyalty influences in OTC (over the counter) medicine brands (Adapted from Moolla, 2010:262).

Please place a cross in the appropriate column

Age Group		**Province of Residence**	
20-30		Eastern Cape	
31-40		Gauteng	
41-50		Free State	
51-60		Kwazulu- Natal	
61+		Limpopo	
Sex		Mpumalanga	
Male		Northern Cape	
Female		North West	
		Western Cape	
Income Segment per annum		**Ethnicity**	
Less than R100 000		Asian	
R100 000 – R250 000		Black	
R250 000 – R500 000		Coloured	
R500 000 – R1000 000		Indian	
More than R1000 000		White	
Industry			
Arts & Crafts		IT & Telecommunications	
Banking		Legal	
Construction		Marketing	
Education		Professional	
Fashion		Property	
Financial		Retail	
Healthcare		Safety & Security	
Human Resources		Tourism	
Insurance		Other (Specify)	

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
1	CUS01	I am very satisfied with the listed OTC brand I purchase	Gaviscon							
			Gelacid							
2	CUS02	Distinctive product attributes in OTC keep me brand loyal	Gaviscon							
			Gelacid							
3	CUS03	My loyalty towards a particular OTC brand increases when I am satisfied with that brand	Gaviscon							
			Gelacid							
4	CUS04	I do not repeat a purchase if I am dissatisfied with a particular OTC brand	Gaviscon							
			Gelacid							
5	CUS05	I attain pleasure from the OTC brands I am loyal towards	Gaviscon							
			Gelacid							
6	SCR01	I do not switch OTC brands because of the high cost implications	Gaviscon							
			Gelacid							
7	SCR02	I do not switch OTC brands because of the effort required to reach a level of comfort	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
8	SCR03	I avoid switching OTC brands due to the risks involved	Gaviscon							
			Gelacid							
9	SCR04	I switch OTC brands according to the prevailing economic conditions	Gaviscon							
			Gelacid							
10	SCR05	I prefer not to switch OTC brands as I stand to lose out on the benefits from loyalty programmes	Gaviscon							
			Gelacid							
11	BTS01	I trust the OTC brands I am loyal towards	Gaviscon							
			Gelacid							
12	BTS02	I have confidence in the OTC brands that I am loyal to	Gaviscon							
			Gelacid							
13	BTS03	The OTC brands I purchase has consistently high quality	Gaviscon							
			Gelacid							
14	BTS04	The reputation of an OTC brand is a key factor in me maintaining brand loyalty	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
15	RPR01	I prefer to maintain a long term relationship with an OTC brand	Gaviscon							
			Gelacid							
16	RPR02	I maintain a relationship with an OTC brand in keeping with my personality	Gaviscon							
			Gelacid							
17	RPR03	I maintain a relationship with an OTC brand that focuses and communicates with me	Gaviscon							
			Gelacid							
18	RPR04	I have a passionate and emotional relationship with the OTC brands I am loyal to	Gaviscon							
			Gelacid							
19	INV01	Loyalty towards an OTC brand increases the more I am involved with it	Gaviscon							
			Gelacid							
20	INV02	Involvement with an OTC brand intensifies my arousal and interest towards that brand	Gaviscon							
			Gelacid							
21	INV03	I consider other OTC brands when my involvement with my OTC brand diminishes	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
22	INV04	My choice of an OTC brand is influenced by the involvement others have with their OTC brand	Gaviscon							
			Gelacid							
23	PVL01	My OTC brand loyalty is based on product quality and expected performance	Gaviscon							
			Gelacid							
24	PVL02	I have an emotional attachment with the OTC brands I am loyal towards	Gaviscon							
			Gelacid							
25	PVL03	Price worthiness is a key influence in my loyalty towards OTC brands	Gaviscon							
			Gelacid							
26	PVL04	The OTC brands that I am loyal to enhances my social self concept	Gaviscon							
			Gelacid							
27	COM01	I have pledged my loyalty to particular OTC brands	Gaviscon							
			Gelacid							
28	COM02	I do not purchase other OTC brands if my OTC brand is unavailable	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
29	COM03	I identify with the OTC brands that I consume and feel as part of the brand community	Gaviscon							
			Gelacid							
30	COM04	The more I become committed to an OTC brand, the more loyal I become	Gaviscon							
			Gelacid							
31	COM05	I remain committed to OTC brands even through price increases and declining popularity	Gaviscon							
			Gelacid							
32	RPS01	My loyalty towards OTC brands is purely habitual	Gaviscon							
			Gelacid							
33	RPS02	I do not necessarily purchase the same OTC brands all the time	Gaviscon							
			Gelacid							
34	RPS03	I always purchase new OTC brands as soon as they are available	Gaviscon							
			Gelacid							
35	RPS04	I establish an OTC brand purchasing pattern and selfdom deviate from it	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
36	RPS05	Loyalty programmes are reason I repeat OTC brand purchases	Gaviscon							
			Gelacid							
37	BAF01	I attain a positive emotional response through the usage of an OTC brand	Gaviscon							
			Gelacid							
38	BAF02	The OTC brands that I am loyal towards makes a difference in my life	Gaviscon							
			Gelacid							
39	BAF03	I am distressed when I am unable to purchase/use a particular OTC brand	Gaviscon							
			Gelacid							
40	BRV01	The OTC brands that I am loyal towards stand for issues that actually matter	Gaviscon							
			Gelacid							
41	BRV02	The OTC brands that I am loyal towards have freshness about them and portray positive significance	Gaviscon							
			Gelacid							
42	BRV03	I know that an OTC brand is relevant through the brand messages communicated	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
43	BRV04	The OTC brands that I am loyal towards are constantly updating and improving so as to stay relevant	Gaviscon							
			Gelacid							
44	BPF01	I evaluate an OTC brand based on perceived performance	Gaviscon							
			Gelacid							
45	BPF02	I will switch OTC brand loyalty should a better performing OTC brand be available	Gaviscon							
			Gelacid							
46	BPF03	I am loyal only towards the top performing OTC brand	Gaviscon							
			Gelacid							
47	CUL01	My choice of OTC brands are in keeping with the choice made by other members in my race group	Gaviscon							
			Gelacid							
48	CUL02	My loyalty towards an OTC brand is based on the choice of OTC brand used by my family	Gaviscon							
			Gelacid							
49	CUL03	Religion plays a role in my choice and loyalty of OTC brands	Gaviscon							
			Gelacid							

No	Code	QUESTION	OTC (over the counter medicine)	Strongly Agree	Agree	Slightly Agree	Undecided	Slightly Disagree	Disagree	Strongly Disagree
50	CUL04	Family used OTC brands indirectly assure brand security and trust	Gaviscon							
			Gelacid							

APPENDIX B

Antacid market summary for Gaviscon

A02A ANTACIDS ANTIFLATULANTS — TOTAL PRIVATE MARKET JUNE 2012 — PAGE 4

CLASS MANUFACTURER PRODUCT	NUMBER PACKS PRICE PER PK	MONTH UNITS + 00	MONTH VALUES + 000	MONTH %	CUMULATIVE UNITS + 00	CUMULATIVE %	CUMULATIVE + -%	CUMULATIVE VALUES + 000	CUMULATIVE %	CUMULATIVE + -%	12 MONTHS TO DATE UNITS + 00	12 MONTHS TO DATE VALUES + 000	12 MONTHS TO DATE %	12 MONTHS TO DATE + -%	12 MONTHS TO DATE % DIREVOL	12 MONTHS TO DATE VALUES $+ 000
SUB-GROUP TOTAL	65	680,2	13877	100	3682,6	100	-3	74859	100	6	7667,6	147823	100	8	20 99	19,013
PLAIN ANTACIDS	28	506,2	10732	77.3	2589,5	70.3	17	57822	77.2	17	5068,4	110050	74.4	18	20 109	14,140
PLAIN ANTIFLAT & CARMINAT	10	37,3	729	5.3	212,7	5.8	-5	4168	5.6	21	443,9	8290	5.6	21	15 112	1,069
ANTACIDS+ANTISPASMODICS	10	37,1	412	3.0	149,4	4.1	-77	1520	2.0	-71	626,9	5417	3.7	-55	12 41	709
AATACIDS + ANTIFLATULANTS	11	57,9	1205	8.7	343,7	9.3	-1	7187	9.6	7	681,6	13500	9.1	2	21 94	1,736
A-ACID+A-FLAT+A-SPASM	3	37,5	343	2.5	371,0	10.1	18	3140	4.2	13	766,0	6449	4.4	21	23 112	823
ANTACIDS + OTHER DRUGS	2	4,3	456	3.3	16,2	0.4	-74	1022	1.4	-67	80,6	4118	2.8	-28	7 67	535
ANTIFLATULANTS + OTHERS	1						-100			-100	0	1	0.0	-20	74	0
NEW PRODUCTS 12 MONTHS	0															
24 MONTHS	0															
NEW FORMS 12 MONTHS	1	7,7	192	1.4	23,8	0.6		595	0.8		23,8	595	0.4		84	73
24 MONTHS	2	20,3	875	6.3	75,8	2.1		3461	4.6		128,1	6359	4.3		32	814
DIRECT SALES	22	141,9	2790	20.1	749,5	20.4	-5	14335	19.1	16	1561,9	29043	19.6	29	119	3,722
ETHICAL MARKET	16	83,4	1181	8.5	565,1	15.3	-45	6748	9.0	-37	1528,6	17397	11.8	-18	14 76	2,250
PROPRIETARY MARKET	49	596,9	12696	91.5	3117,5	84.7	12	68111	91.0	14	6139,0	130426	88.2	13	20 104	16,763
SCHEDULE 1	3	2,4	98	0.7	4,9	0.1	-90	166	0.2	-91	53,1	2005	1.4	-37	18 59	264
SCHEDULE 2	11	69,0	671	4.8	492,4	13.4	-46	4231	5.7	-43	1340,3	10841	7.3	-27	19 67	1,400
MANUFACTURERS																
RECKITT BENCKISER (R&B)	1	142,4	6611	47.6	747,4	20.3	16	34942	46.7	9	1454,7	67134	45.4	11	24 102	8,633
ADCO-GENERICS (AOJ)	4	265,6	1492	10.8	1415,6	38.4	0	8224	11.0	-1	2940,7	17845	12.1	10	24 102	2,282
ASPEN P/CARE OTC (AOT)	14	73,1	1216	8.8	419,6	11.4	-10	6712	9.0	-12	892,3	14375	9.7	-2	31 91	1,856
CIPLA-MEDPRO (CD8)	2	39,2	940	6.8	240,8	6.5	33	6514	8.7	74	436,6	10997	7.4	51	35 140	1,411
BAYER CONSUMER (BCN)	1	34,2	704	5.1	201,5	5.5	-4	4054	5.4	4	423,4	8239	5.6	6	98	1,063
ADCOCK OTC (ADD)	4	26,4	653	4.7	149,7	4.1	2	3719	5.0	26	291,6	7179	4.9	20	111	925
GLAXOSMITHKLINE CS (GKC)	2	45,3	926	6.7	192,7	5.2	22	3895	5.2	30	351,8	6948	4.7	35	1 124	889
SANOFI-AVENTIS (S.A)	2	12,6	456	3.3	80,4	2.2	13	3045	4.1	4	146,3	5455	3.7	-6	87	702
3M SOUTH AFRICA (3MS)	1	1,9	358	2.6	11,4	0.3	-29	860	1.1	-41	29,9	2375	1.6	-18	76	306
AKACIA HEALTHCARE (A1G)	1	1	11	0.1	1,2	0.0	-100	47	0.1	-98	332,5	1926	1.3	-59	38	260
PHARMA DYNAMICS (PD7)	2	4,8	150	1.1	28,1	0.8	18	846	1.1	25	53,2	1578	1.1	24	114	203
GULF DRUG COMPANY (GU/)	3	18,5	139	1.0	126,3	3.4	197	931	1.2	77	178,0	1476	1.0	36	126	189
G M PHARM (GMP)	1	2,6	53	0.4	16,4	0.4	-8	334	0.4	6	33,7	688	0.5	2	94	89
EASIHEALTH (E/I)	1	4	38	0.3	2,2	0.1	>999	206	0.3	>999	4,1	369	0.2	>999	>999	47
BE-TABS PHARMA (BE-)	3	8,0	72	0.5	18,2	0.5	>999	162	0.2	68	19,2	229	0.2	26	116	28
ASPEN P/CARE GEN (A&G)	1				4	0.0	-97	6	0.0	-97	13,5	221	0.1	-45	14 51	29
NATURMADE (N.M)	1	3	14	0.1	1,9	0.1	-14	106	0.1	-10	3,9	218	0.1	7	99	28
FULFORD (FUL)	1	2,1	14	0.1	14,0	0.4	-8	90	0.1	-8	28,6	184	0.1	-9	84	24
GLENMARK (GMK)	1	1,2	14	0.1	5,5	0.1	61	62	0.1	62	14,1	159	0.1	88	174	20
DANIEL & FOURIE (D+F)	1	5	8	0.1	3,2	0.1	-3	48	0.1	29	6,7	87	0.1	10	102	11
DE WITTS (D.W)	1	4	6	0.0	2,6	0.1	42	38	0.1	41	4,4	65	0.0	12	103	8
SPECPHARM (SC2)	1						-100			-100	2	38	0.0	-46	50	5
ROCHE ETHICALS (RET)	1	0	1	0.0	1	0.0	550	7	0.0	551	1	16	0.0	500	555	2
LINK OWN BRAND (LKO)	1	4	1	0.0	2,3	0.1	12	6	0.0	13	4,7	13	0.0	22	113	2
BEIGE PHARMA (BP1)	2	1	0	0.0	5	0.0	-3	2	0.0	14	1,0	4	0.0	16	107	1
ASPEN P/CARE DISC (A&D)	2	1	0	0.0	7	0.0	-34	1	0.0	-30	2,0	4	0.0	6	98	0
Z-OTHERS AI (ZOA)	3										1	3	0.0			0
OTHER MANUFACTURER(6)	7	0	0	0.0	1	0.0	-99	0	0.0	-100	2	1	0.0	-100	0	0
PLAIN ANTACIDS A02A1	28	506,2	10732	100	2589,5	100	17	57822	100	17	5068,4	110050	100	18	20 109	14,140
MANUFACTURERS																
RECKITT BENCKISER (R&B)	1	142,4	6611	61.6	747,4	28.9	16	34942	60.4	9	1454,7	67134	61.0	11	24 94	8,633
ADCO-GENERICS (AOJ)	1	233,7	1233	11.5	1072,5	41.4	13	5505	9.5	32	2200,2	11700	10.6	48	24 126	1,494
CIPLA-MEDPRO (CD8)	1	22,3	696	6.5	186,2	7.2	53	5731	9.9	96	302,9	9098	8.3	61	36 136	1,169
BAYER CONSUMER (BCN)	1	34,2	704	6.6	201,5	7.8	-4	4054	7.0	4	423,4	8239	7.5	6	90	1,063
GLAXOSMITHKLINE CS (GKC)	2	45,3	926	8.6	192,7	7.4	22	3895	6.7	30	351,8	6948	6.3	35	1 114	889
ADCOCK OTC (ADD)	1	9,6	168	1.6	57,3	2.2	0	995	1.7	0	113,7	1977	1.8	-5	81	255
SANOFI-AVENTIS (S.A)	1	3,1	76	0.7	23,3	0.9	25	643	1.1	1	42,7	1305	1.2	2	87	168
ASPEN P/CARE OTC (AOT)	2	3,3	109	1.0	24,0	0.9	95	790	1.4	85	35,8	1197	1.1	33	6 112	154
PHARMA DYNAMICS (PD7)	1	2,8	88	0.8	16,3	0.6	17	491	0.8	23	31,0	918	0.8	21	103	118
GULF DRUG COMPANY (GU/)	2	7,7	68	0.6	56,6	2.2	100	469	0.8	8	87,8	881	0.8	2	87	113
EASIHEALTH (E/I)	1	4	38	0.4	2,2	0.1	>999	206	0.4	>999	4,1	369	0.3	>999	>999	47
DANIEL & FOURIE (D+F)	1	5	8	0.1	3,2	0.1	-3	48	0.1	29	6,7	87	0.1	10	93	11
BE-TABS PHARMA (BE-)	2				1	0.0	-93	7	0.0	-93	1,1	73	0.1	-60	34	9
DE WITTS (D.W)	1	4	6	0.1	2,6	0.1	42	38	0.1	41	4,4	65	0.1	12	95	8
SPECPHARM (SC2)	1						-100			-100	2	38	0.0	-46	46	5
LINK OWN BRAND (LKO)	1	4	1	0.0	2,3	0.1	12	6	0.0	13	4,7	13	0.0	22	104	2
BEIGE PHARMA (BP1)	2	1	0	0.0	5	0.0	-3	2	0.0	14	1,0	4	0.0	16	98	1
ASPEN P/CARE DISC (A&D)	2	1	0	0.0	7	0.0	-34	1	0.0	-30	2,0	4	0.0	6	90	0
OTHER MANUFACTURER(3)	4	0	0	0.0	1	0.0	9	0	0.0	-65	2	3	0.0	286	328	0
GAVISCON (R&B)	27	142,4	6611	61.6	747,4	28.9	16	34942	60.4	9	1454,7	67134	61.0	11	24 94	8,633
* C/M HANDYPAC AAG	1	7,7	192	2.9	23,8	3.2		595	1.7		23,8	595	0.9		84	73
< 160 8.11	24.99															
TABS AAG	2	0	0	0.0	0	0.0	-100	0	0.0	-100	8	61	0.1	-99	1	9

Source: IMSHEALTH (2012)

APPENDIX C

Antacid market summary for Gelacid

A02A ANTACIDS ANTIFLATULANTS — TOTAL PRIVATE MARKET JUNE 2012 — PAGE 5

CLASS / MANUFACTURER / PRODUCT	NUMBER PACKS	PRICE PER PK	MONTH UNITS + 00	MONTH VALUES + 000	MONTH %	CUMULATIVE UNITS + 00	CUM %	CUM + -%	CUM VALUES + 000	CUM %	CUM + -%	12 MONTHS TO DATE UNITS + 00	12 MTH VALUES + 000	12 MTH %	12 MTH + -%	DIR	EVOL	VALUES $+ 000
A02A1 (CONTINUED)																		
20		9.74	30.22					-100			-100	0	0	0.0	-100		0	0
60		9.74	76.38	0	0	0.0	0	0.0	-100	0	0.0	-100	8	61	0.1	-97		3	9
TABS PEPP	AAG		7	27,7	652	9.9	140,8	18.8	244	3297	9.4	317	287,7	6744	10.0	356	35	411	856
6		7.01	11.87						-100			-100	0	0	0.0	-100		0	0
< 8		8.11	9.99	8,5	85	1.3	41,0	5.5		409	1.2		68,4	683	1.0		39		86
12		7.01	21.50				7,3	1.0	-77	157	0.4	-77	70,5	1517	2.3	56	7	140	198
< 16		8.11	19.99	6,5	130	2.0	34,1	4.6		682	2.0		48,7	973	1.4		7		123
< 24		8.11	27.99	8,0	223	3.4	35,8	4.8		1002	2.9		58,0	1624	2.4		47		204
< 32		8.11	35.99	1,4	49	0.7	6,1	0.8		219	0.6		11,1	399	0.6		18		50
< 48		8.11	49.99	3,3	165	2.5	16,6	2.2		828	2.4		31,0	1549	2.3		70		195
ADVANCE SUSP	DGK		2	3	30	0.5	1,1	0.1	-23	125	0.4	-23	2,1	250	0.4	-10		81	32
500 MG			2	3	30	0.5	1,1	0.1	-23	125	0.4	-23	2,1	250	0.4	-10		81	32
@ 180 ML		9.74	33.93										0	0	0.0				0
500 ML		1.00	118.87	3	30	0.5	1,1	0.1	-23	125	0.4	-23	2,1	250	0.4	-10		81	32
LIQ & 12 SAC	DGK		1						-100			-100	0	1	0.0	-100		0	0
300 ML		3.10	70.45																
LIQ ADV ANIS	DGK		2	6,0	463	7.0	36,6	4.9	-2	2876	8.2	-5	70,2	5548	8.3	6	23	95	716
200 ML		8.99	58.11	4,2	245	3.7	25,0	3.3	4	1453	4.2	6	47,2	2744	4.1	10	19	100	354
500 MG			1	1,8	218	3.3	11,6	1.6	-14	1423	4.1	-13	22,9	2805	4.2	1	26	91	362
500 ML		8.99	122.27																
LIQ ADV PEPP	DGK		3	17,9	1090	16.5	99,1	13.3	18	5608	16.0	38	191,4	9896	14.7	33	35	120	1,271
200 ML		2.08	58.11	2,4	140	2.1	14,7	2.0	9	851	2.4	11	27,0	1572	2.3	15		104	202
500 ML		2.08	122.27	4,7	569	8.6	20,5	2.7	102	2501	7.2	104	29,1	3554	5.3	39	58	126	453
12X 10 ML		2.08	35.26	10,8	382	5.8	64,0	8.6	6	2256	6.5	9	135,3	4771	7.1	36	30	123	615
LIQ ANISEED	DGK		4	45,4	2350	35.5	258,6	34.6	6	13299	38.1	6	502,0	25698	38.3	9	17	98	3,313
150 ML		9.90	35.26	23,2	817	12.4	134,7	18.0	6	4748	13.6	7	264,0	9310	13.9	4	15	94	1,200
200 ML		9.74	24.57	1	4	0.1	7	0.1	-9	17	0.0	-9	1,5	37	0.1	-1		89	5
300 ML		9.90	61.09	17,9	1094	16.5	99,9	13.4	6	6101	17.5	5	192,1	11736	17.5	10	17	100	1,513
600 ML		9.90	103.99	4,2	436	6.6	23,4	3.1	7	2433	7.0	8	44,4	4615	6.9	16	24	105	595
LIQ PEPPERM	DGK		2	24,9	1150	17.4	135,5	18.1	3	6276	18.0	4	272,4	12576	18.7	13	21	102	1,622
150 ML		2.97	35.26	14,3	505	7.6	77,5	10.4	0	2732	7.8	0	157,4	5549	8.3	4	17	94	716
300 ML		2.97	61.09	10,6	645	9.8	58,0	7.8	7	3544	10.1	8	115,0	7027	10.5	22	23	110	906
+ P/MINT PLUS	DGK		3	12,6	683	10.3	51,9	7.0	11	2867	8.2	10	104,3	5764	8.6	48	27	134	741
150 ML		10.10	43.17	5,4	233	3.5	27,8	3.7	3	1200	3.4	3	57,9	2499	3.7	43	24	129	322
300 ML		10.10	71.96	4,0	288	4.4	20,9	2.8	5	1505	4.3	5	43,1	3103	4.6	45	28	131	399
< 12X 10 ML		6.12	49.99	3,2	162	2.4	3,2	0.4		162	0.5		3,2	162	0.2		36		19
MAYOGEL	(AOJ)		3	233,7	1233	11.5	1072,5	41.4	13	5505	9.5	32	2200,2	11700	10.6	48	24	126	1,494
SUSP	DGK		3	233,7	1233	100	1072,5	100	13	5505	100	32	2200,2	11700	100	48	24	100	1,494
2.50 L		1.83	59.95	9	53	4.3	7,1	0.7	33	426	7.7	33	14,0	838	7.2	56	13	105	107
100 ML			3.448	122,4	421	34.1	654,2	61.0	60	2250	40.9	112	1163,2	3947	33.7	77	25	120	504
200 ML			6.888	110,4	759	61.6	411,2	38.3	-23	2829	51.4	2	1023,1	6916	59.1	35	25	91	883
GELACID	(CD8)		4	22,3	696	6.5	186,2	7.2	53	5731	9.9	96	302,9	9098	8.3	61	36	136	1,169
CHEW TAB	AAG		1				0	0.0	-100	0	0.0	-100	3,3	15	0.2	-85	11	9	2
2		9.09	4.39																
TABS	AAG		1	1,7	47	6.7	11,0	5.9	113	297	5.2	113	21,4	576	6.3	108	55	129	74
20		7.01	26.93																
SUSP	DGK		2	20,6	649	93.3	175,2	94.1	65	5434	94.8	99	278,2	8508	93.5	61	35	100	1,093
100 ML		3.03	22.02	10,0	221	31.7	90,1	48.4	79	1985	34.6	79	139,9	3081	33.9	46	28	91	396
200 ML		7.01	40.559	10,6	428	61.6	85,1	45.7	52	3449	60.2	112	138,3	5426	59.6	71	39	106	697
DIGESTIF RENNIE	(BCN)		9	34,2	704	6.6	201,5	7.8	-4	4054	7.0	4	423,4	8239	7.5	6		90	1,063
ANISEED	AAG		3	4,4	76	10.8	26,2	13.0	12	428	10.6	19	55,8	880	10.7	25		119	114
24		7.08	13.113	2,5	32	4.6	16,2	8.0	20	207	5.1	30	35,0	435	5.3	22		116	56
48		7.08	22.493	1,9	44	6.2	10,0	5.0	2	221	5.5	11	20,8	445	5.4	30		123	58
96		7.08	33.59													-100			
PEPPERMINT	AAG		3	14,2	290	41.2	82,9	41.1	-7	1680	41.5	2	172,2	3400	41.3	3		97	438
24			13.113	7,6	99	14.1	44,4	22.0	-10	568	14.0	-2	92,5	1153	14.0	0		95	148
48			22.493	4,0	91	12.9	22,5	11.2	-2	494	12.2	6	46,2	986	12.0	5		100	127
96			39.543	2,5	100	14.2	16,0	7.9	-5	619	15.3	3	33,5	1261	15.3	4		98	163
SPEARMINT	AAG		3	15,6	338	47.9	92,4	45.9	-5	1945	48.0	3	195,3	3958	48.0	5		99	511
24			13.113	7,6	99	14.1	45,8	22.7	-6	585	14.4	1	100,2	1246	15.1	10		104	161
48			22.493	4,7	105	15.0	26,5	13.2	2	582	14.4	10	53,3	1140	13.8	8		102	147
96			39.543	3,4	133	18.9	20,1	10.0	-8	777	19.2	0	41,8	1572	19.1	-1		93	203
ENO FRUIT SALTS	(GKC)		14	34,2	774	7.2	147,3	5.7	11	3312	5.7	29	271,3	5901	5.4	32	1	112	755
APPLE	DEH		1	4	9	1.1	3,4	2.3	16	67	2.0	37	6,3	118	2.0	69		128	15
100 G			20.124																
ORANGE	DEH		2	5,5	144	18.6	18,5	12.6	17	463	14.0	41	33,1	792	13.4	53	3	116	101
100 G			20.124	2,3	46	5.9	8,1	5.5	7	159	4.8	28	14,3	267	4.5	40	3	106	34
200 G			30.024	3,3	98	12.7	10,4	7.1	26	304	9.2	49	18,8	525	8.9	61	3	122	67
REGULAR	DEH		2	10,1	264	34.1	48,1	32.7	0	1186	35.8	17	91,5	2172	36.8	21	2	92	278
100 G			20.124	4,0	80	10.3	22,4	15.2	6	438	13.2	26	40,6	759	12.9	22	2	92	97
200 G			30.024	6,1	184	23.8	25,7	17.4	-5	748	22.6	12	50,9	1413	23.9	21	2	92	181
APPL DISP	DEP		1	0	1	0.1	1	0.1	138	7	0.2	156	1	9	0.2	107		157	1
72X 5 G			105.094																
APPL TRAV PK	DEP		1	7	12	1.5	4,6	3.1	-13	71	2.2	4	9,6	142	2.4	55		118	18
10X 5 G			16.254																
LEMON	DEP		1	2	4	0.6	1,8	1.2	-13	35	1.1	3	3,2	61	1.0	9		83	8
100 G			20.124																
LEMON DISP	DEP		1	0	2	0.2	0	0.0	66	5	0.1	85	1	10	0.2	173		207	1
72X 5 G			105.094																
ORA TRAV PK	DEP		1	5,2	84	10.9	16,9	11.5	105	265	8.0	145	26,4	401	6.8	137	2	179	51
10X 5 G			16.254																
ORANG DISP	DEP		1	0	3	0.4	2	0.2	208	22	0.7	234	4	36	0.6	154		193	4
72X 5 G			105.094																
REG DISP	DEP		1	5	48	6.2	2,8	1.9	-5	281	8.5	5	5,5	535	9.1	0		75	69
72X 5 G		5.88	105.094																
REG TRAV PK	DEP		2	11,5	204	26.4	50,8	34.5	9	909	27.4	32	95,2	1626	27.5	33	1	101	208
10X 5 G			16.254	10,0	163	21.0	40,3	27.4	4	630	19.0	24	75,3	1120	19.0	16	2	88	143
20X 5 G			27.764	1,5	42	5.4	10,5	7.1	30	279	8.4	55	19,9	505	8.6	99		151	65
PHIPPS MAGNESIA	(ADD)		2	9,6	168	1.6	57,3	2.2	0	995	1.7	0	113,7	1977	1.8	-5		81	255

Source: IMSHEALTH (2012)